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ON

THE DIAGNOSIS AND TREATMENT OF SOME DISEASES OF THE ENDOCRINE GLANDS.

BY

GEORGE R. MURRAY, M.D., D.C.L., F.R.C.P.,

PROFESSOR OF SYSTEMATIC MEDICINE IN THE VICTORIA UNIVERSITY OF MANCHESTER; PHYSICIAN TO THE MANCHESTER ROYAL INFIRMARY.

ENDOCRINOLOGY is one of the younger branches of medicine, but it has grown so rapidly of recent years that there are already several textbooks devoted to the physiological, pathological, and clinical aspects of the subject, and the Association for the Study of Internal Secretions in America publishes a quarterly journal entirely devoted to this subject. A brief consideration of the early diagnosis and treatment of some of the diseases of the endocrine glands in the light of our present knowledge will, therefore, be of interest to you. Time will not permit of a consideration of the special physiological action of these glands, but, speaking generally, it may be said that each forms a secretion containing one or more hormones, which are carried by the blood to the tissues. Each hormone has a special influence upon growth and development in the young and upon general metabolism throughout life. The symptoms of disease of an endocrine gland are therefore due either to changes in its size causing pressure upon surrounding tissues, or to alterations in its functional activity leading to an increase or decrease in the supply of hormones, or possibly to an alteration in their character. Thus, for example, in the case of the thyroid gland symptoms may be due to the pressure exerted by an enlarged gland upon the neighbouring structures, or they may be the result of hyperthyroidism, hypothyroidism, or dysthyroidism. Changes in size and function often occur together, but we may have great change in size without obvious alteration of function, or we may have marked change in function associated with but slight change in size.

THYROID GLAND.

It is somewhat remarkable, at a time when the importance of the diseases of the endocrine glands is fully recognized, that little, if any, mention is made in textbooks devoted to clinical diagnosis of the methods of either examining these organs or of estimating their functional activity. In other branches of medicine the tendency in the past has been rather to devote a great deal of care to the physical examination of diseased organs, while too little attention was paid to the study of the early symptoms which indicate change or failure in functional efficiency. Diseases of the endocrine glands have, however, generally been recognized by observing symptoms which result from alterations in their functional activity, and not by physical examination. In the case of the thyroid gland, at any rate, much may be learnt by a careful physical examination conducted on similar lines to those we follow in examination of other internal organs, such as the lungs. We may with advantage shortly consider the application of these familiar methods of examination to the investigation of the condition of a diseased thyroid gland and the information which may be obtained by their regular use in the examination of patients suffering from maladies of this gland.

On inspection in a good light any marked enlargement of the thyroid gland will at once be noted. In the case of a uniform parenchymatous enlargement the swelling in front of the neck is seen to retain the normal shape of the gland, the right lobe being usually larger than the left. When the size and shape of the swelling have been fully observed, the patient should be asked to swallow. During the act of deglutition the enlarged thyroid will be seen to rise and fall with the larynx and trachea. It must, however, be remembered that there are exceptions to this rule. Rarely, a tumour which is not of thyroidal origin, such as a tuberculous gland, a lipoma, an abscess or a sebaceous cyst, may become adherent to the larynx or trachea, and by moving with them simulate a goitre. On the other hand, a goitre may be prevented from moving owing to its large size or to fixation to surrounding structures. This fixation occurs in cases of malignant goitre, or it may be due to the presence of inflammatory adhesions. In a case recently seen an elastic swelling, about the size of a walnut high up in the neck, which was thought to be a branchial cyst, on removal turned out to be an enlarged accessory thyroid gland.

Slight uniform enlargement of the gland is common in young women, and it has certainly become more noticeable since the introduction of the modern fashion of wearing dresses which leave the front of the neck exposed to view. It has been thought by some that this form of enlargement has actually become more frequent of late. I do not, however, know of any reliable observations as to whether this enlargement really occurs oftener now than it did before the war. In some people an apparent fullness of the front of the neck is caused by two parallel creases in the skin crossing the front of the neck at about the level of the upper and lower poles of the lateral lobes of the thyroid gland with a layer of subcutaneous fat lying between. It will, however, be easily noted that this fullness extends laterally beyond the limits of the gland and does not move with deglutition. Irregularity in the outline of a goitre due to the presence of adenomata or cysts within it are obvious on inspection. Any distension of the external or internal jugular veins by the pressure of a goitre will also be noted on inspection.

On palpation of the front of the neck, except in fat persons, the size of the thyroid gland can usually be approximately determined. When it is atrophied the rings of the trachea can be more distinctly felt than usual and the finger can be pressed in on each side of the trachea to a greater extent than when the gland is of normal size. Any slight increase in size of the gland which may be regarded as pathological can be detected more easily than by inspection alone. Larger goitres can be more fully examined and the presence of an adenoma or cyst, unless deeply seated, can usually be determined. At the same time the position of the larynx and trachea should be determined as accurately as possible so as to ascertain if they are displaced to the right or left of the middle line. It is often difficult to distinguish between an adenoma and a cyst. Both are smooth and rounded in outline, and a tense cyst may feel like a firm adenoma, or an elastic adenoma may feel like a cyst. On careful fixation by the tips of four fingers fluctuation may be felt in a cyst which is absent in an adenoma. A reliable and simple method of recording the size of an enlarged gland is desirable. The following measurements are helpful but cannot be relied on to indicate slight changes in size: The circumference of the neck over the isthmus or most prominent part of the goitre; the transverse measurement of the goitre from the outer border of each lobe and the vertical measurement of each lobe separately. The transverse diameter of each adenoma or cyst may also be recorded. Thrills, which are frequently present in cases of exophthalmic goitre, are easily detected on light palpation of the goitre.

Percussion of a goitre is not often employed, but may yield valuable information in certain cases in helping to determine the position of the trachea or the presence of gas in a cystic adenoma. It is often important to determine the position of the trachea in relation to a unilateral or asymmetrical goitre so as to ascertain if it is displaced from the middle line. Careful light percussion on the left forefinger laid on the front of the neck, parallel to the long axis of the trachea, will often yield a tympanitic note when it is immediately over the windpipe. Finger-tip percussion may also be employed, the terminal phalanx of the left forefinger being flexed as nearly as possible at a right angle, so that the tip of the right middle finger may strike on the terminal interphalangeal joint as nearly as possible in the direction of the long axis of this terminal phalanx when it is placed on the front of the neck. Sansom's pleximeter may also be employed in percussing out the position of the trachea, the long arm being placed in a vertical position over the left edge of the goitre and gradually moved across the front of the neck until the tracheal note is obtained. The presence of gas in a cystic goitre is a rare occurrence, but it may easily be overlooked if a goitre is not percussed. Gas in such a situation can only be detected by percussion or by *x*-ray examination. Several years ago I saw a striking example of this with

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Dr. Albert Hopkinson. The patient was very ill, with a high irregular temperature and other indications of an acute toxaemia, for which there was no obvious cause. He had a large cystic goitre, which had been present for a long time without causing any special inconvenience. In the course of the examination of this patient the goitre was percussed and yielded a resonant note. As no other source of infection was found, we came to the conclusion that the cystic goitre had become infected by the *Bacillus coli communis*, which, being a gas-forming organism, had caused the formation of gas in the cyst, and that this infected cyst was the source of the man's acute illness. Drainage of the cyst was advised. This was done, and at the operation the cyst was found to contain gas and pus with the characteristic smell produced by *Bacillus coli*. After the operation the patient made an uninterrupted recovery.

Auscultation of the trachea is useful in cases of goitre in order to ascertain the presence and degree of compression of the trachea. In auscultation of the trachea the chest-piece of either a single or double stethoscope is placed over the front of the trachea between the cricoid cartilage and the upper end of the sternum. The loudness and character of the tracheal breath sounds normally vary considerably in different individuals, so that it is advisable to be familiar with the sounds as heard in a number of healthy persons. When the trachea is compressed by a goitre the breath sounds become higher pitched, and are as distinctly audible during expiration as during inspiration. If the compression is marked so that the trachea is much narrowed the breath sounds are stridulous in character. The amount of change from the normal serves as a useful indication of the amount of narrowing which has taken place. The alteration in the sound as normally generated by the passage of air between the vocal cords is probably due to the passage of the air through the constriction caused by the pressure of the goitre. The degree of compression does not of course depend on the size of the goitre. The largest goitre I have seen did not compress the trachea, as its weight dragged it downwards on to the upper part of the chest. On the other hand, quite a small retrosternal goitre may cause urgent and dangerous dyspnoea owing to the lack of space for expansion in this situation. In a case of "ligneous thyroiditis," recorded by Mr. F. A. Southam and myself,[1] there was urgent dyspnoea necessitating operation, although the enlargement of the gland was only moderate, and microscopical examination of the portion which was removed showed that the glandular structure had been replaced by dense fibrous tissue. Auscultation of the enlarged gland in Graves's disease frequently reveals the presence of murmurs. A continuous venous murmur or a systolic murmur synchronous with the pulse in the thyroid arteries may be audible.

Examination by *x* rays may be employed in some cases to determine the size and position of the trachea and for the detection of a retrosternal goitre. By the systematic examination of the thyroid gland just described we can obtain a good deal of useful information as to its size, shape, and relationship to important neighbouring structures, such as the trachea, but physical examination alone tells us but little as to the functional activity of the gland, which in many cases is much more important than its size or shape. The functional activity of an endocrine gland can be roughly estimated by a careful consideration of the clinical symptoms and signs presented by the patient when the normal supply of hormones is either increased or decreased owing to structural changes in the gland. Further information can be obtained by estimating the changes in metabolism which occur in these maladies by the more accurate methods of the laboratory which are gradually coming into use. It will be useful first to consider the clinical indications which enable us to determine, at as early a stage as possible, that a patient's symptoms are due to disease of an endocrine gland. The symptoms caused by marked increase of the activity of the thyroid gland, as seen in fully developed Graves's disease, are well known. The symptoms of failure of function as seen in myxoedema and cretinism are characteristic. Owing to the gradual onset of these symptoms their true nature is apt to remain unrecognized too long in some cases. In order to obtain full success in the treatment of the maladies in which the functional activity of the gland is abnormal it is most important that the change should be recognized at the earliest possible stage. When the gland becomes overactive an excess of thyroidal hormone passes into the blood and metabolism is increased, and it will be useful to consider the symptoms which occur during this period of simple hyperthyroidism when obvious enlargement of the gland may or may not be present. It must be remembered that such hypersecretion may develop in a thyroid gland which has previously been normal in size or in one which has been visibly enlarged for a longer or shorter period without causing any general symptoms. A goitre which is accompanied by some of the symptoms of hyperthyroidism may conveniently be described as a toxic goitre. All grades of hyperthyroidism occur, from slight forms of toxic goitre up to the most severe and fatal forms of Graves's disease, and no sharp division can be drawn between them.

When we inquire into the early history of a case of Graves's disease, it will often be ascertained that for some time prior to the appearance of any well recognized symptom of the malady there has been a period, extending over several weeks or months, during which the patient experienced a constant sense of fatigue. This symptom is present in the early stages of so many cases that it may be considered one of the earliest symptoms of hyperthyroidism of gradual onset. It is probably due to the increased metabolism of the tissues, and may be compared to the exhaustion which is experienced during the ambulatory stage of a fever of gradual onset. At the same time there may be a gradual but progressive loss of weight, even when more food than usual is being taken, owing to the increase of appetite, which is not uncommon at this early stage. Another early symptom is a change in disposition. This is shown by restlessness and a tendency to be agitated or worried by things which previously would have passed atmost unnoticed. There may be marked mental depression, or periods of depression or anxiety may alternate with those of agitation. A fine tremor can usually be seen or felt in the hands when the patient extends both arms with the fingers fully spread out. During this early stage there is a slight persistent acceleration of the pulse rate by ten or twenty beats a minute, so that the frequency, even at rest, is raised to 80 or 90. The heart responds too readily to slight exertion or emotion. In order to appreciate this the pulse should be counted when the patient is sitting or lying down, when standing, and after some definite effort, such as stepping up on to a chair five times in fifteen seconds. It will generally be found that either standing or this simple exercise causes an acceleration of twenty or more beats a minute, and that it takes more than half a minute for the pulse to fall to its former frequency. In some cases the patient is conscious of the accelerated pulse rate, or complains of palpitation under the influence of exercise or emotion. It is naturally important in these cases to exclude as far as possible other causes of cardiac irritability before coming to the conclusion that it is thyroidal in origin. When the above symptoms alone are present they indicate hyperthyroidism. If they are associated with an enlarged thyroid gland they indicate a toxic goitre. At the stage we are considering no exophthalmos is present, but the patient may have a somewhat staring or startled expression which is due to a widening of the palpebral fissure caused by slight spasmodic contraction of the elevator of the upper eyelid. At first this sign may be unilateral, and even when it is bilateral the palpebral fissure may be obviously wider on one side than the other. The elevation of the upper eyelids may at first only take place when the eyes are suddenly directed to the right or left, so that the widening of the palpebral fissure is only present for a second or two, after which the upper eyelids fall to their normal position. A slight increase in moisture of the skin, especially of the hands, is perceptible in many cases. Any former tendency to chilblains or chilblain circulation is diminished, or may disappear altogether. In this connexion it is interesting to remember the value of thyroid extract in the treatment of these conditions. In those who are prone to suffer frequently from common colds this tendency diminishes as thyroidal activity increases, only to return when the hyperthyroidism ceases. When these symptoms are present there may be no obvious goitre, though it is usually found on making a careful physical examination of the thyroid gland that it is appreciably enlarged. It is, however, quite possible, though unusual, for a gland which is not apparently larger than normal to be suffi-

ciently overactive to produce the symptoms already mentioned.

I wish to emphasize the importance of recognizing these early stages of the malady, as it is at this period that treatment is most effective, and a long illness may be prevented or curtailed by its prompt application while the symptoms are not yet fully developed. It is to those engaged in general practice that we must look for the detection of these early cases and for the observation of other early symptoms and signs which may occur during this period of the evolution of the malady. After this stage has been reached the pulse rate increases, the thyroid becomes obviously enlarged, the tremor of the hands is easily seen, and exophthalmos may or may not appear, and the disease becomes easily recognizable. A more accurate estimation of the amount of derangement of the gland may be made by a determination of the basal metabolic rate of the patient, as this is increased in hyperthyroidism and decreased in hypothyroidism. This method has been employed in the Mayo clinic by Dr. Irene Sandiford[2] with interesting results. After twelve hours' fast and twenty minutes' rest in bed, all the expired air is collected in a gasometer for a given period of time. The amounts of carbon dioxide and oxygen in it are then determined by means of the Haldane gas analysis apparatus, the total amounts of oxygen absorbed and of carbon dioxide produced in one hour are determined, and the total heat production ascertained. The total number of calories per hour is divided by the surface area, which varies according to the patient's height and weight. The number of calories for each square metre of the body surface is then compared with the normal. The basal metabolic rate is then expressed in plus or minus percentages according as the production of heat is greater or less than normal. In severe cases of exophthalmic goitre the basal metabolic rate may be as high as 100 per cent. over normal, while in advanced myxoedema it may fall to 40 per cent. below normal. The determination of the metabolic rate has proved of value in distinguishing between true hyperthyroidism and a neurosis simulating it, and it is also a useful index of the improvement resulting from treatment. Thus it was found in thirteen out-patients that the average metabolic rate was +59 per cent. and the average pulse rate 115. After rest in bed for about a week the average metabolic rate fell to +46 per cent. and the average pulse rate to 108. In a group of 22 severe cases of exophthalmic goitre treated by operation at the Mayo clinic the average basal metabolic rate was +66 per cent. and the pulse rate 123. After rest in bed and two ligations of the thyroid arteries the metabolic rate fell to +46 per cent. and the pulse to 115. After three months' rest at home the metabolic rate was +39 per cent. and the pulse rate 107. After subsequent thyroidectomy the metabolic rate was +16 per cent. and the pulse rate 89. In three cases the total result of the treatment was an average fall of 50 per cent. in the metabolic rate and a diminution of 34 in the pulse rate. Further investigations on these lines may render valuable assistance in the recognition of these early stages of hyperthyroidism. In severe cases of Graves's disease glycosuria may be present and the sugar tolerance is lowered, but in early cases the determination of sugar tolerance is not likely to be of much practical value.

As soon as a condition of hyperthyroidism or toxic goitre is recognized treatment must be undertaken, as these early cases are so much more amenable to treatment than those in which the fully developed Graves's disease is present. Rest in bed is advisable for a few weeks, after which twelve to sixteen hours a day should suffice. A liberal diet consisting of milk, fats, and carbohydrates should be regulated according to the necessities of each case. Red meats and meat extracts should be avoided, as they tend to stimulate thyroidal secretion. In these early cases treatment by radium or *x* rays is of considerable value. As a rule *x* rays have been used in my cases, when they can conveniently be applied at short intervals, and radium when long intervals between the applications are desirable on account of the distance to be travelled from home. In the use of *x* rays as large a dose is given as can be tolerated without injury to the skin. Dr. A. E. Barclay, who has treated many of my cases, employs from one to one and a half Sabouraud units measured before filtration, and then passed through 3 mm. of aluminium and a layer of boiler felt on the skin. This dose is repeated twice a week for the first few weeks, after that once a week, and later on at lengthening intervals according to the requirements of the case. The radium treatment has been carried out by Dr. A. Burrows at the Manchester Radium Institute by the application of plates, of a strength of 2.5 milligrams or millicuries to the square centimetre, over the enlarged gland. The plates were of such size that 45 to 76.5 milligrams were applied each time, screened by 1.5 millimetres of lead. The plates were applied for twenty-four hours about once every six weeks. In early cases radio-therapeutic treatment for three to six months may suffice, whereas in fully developed cases it may be necessary to continue it for one or even two years in order to obtain its full effects.

If these methods of treatment are not available the daily application of a mild faradic current by electrodes applied over the goitre and at the back of the neck for an hour twice a day may be used instead. Many drugs have been employed, but arsenic given in small doses for several months at a stretch has given the best results. No consistently good results have been observed after the use of organic extracts, with perhaps the exception of suprarenal gland. With the exception of fresh milk from a thyroidless goat, the various preparations made from animals after thyroidectomy have not fulfilled their promise. The various crises and complications which occur in Graves's disease require treatment which is largely symptomatic.

The recognition of the early signs of thyroidal deficiency in infants and young children is of vital importance as delay in the commencement of treatment may cause such arrest of development as can never be fully made good. One of the earliest signs of cretinism is a delay or arrest of normal growth, and this should at once lead to a careful search for other signs of the malady. Lack of the normal activity may be noted by the mother along with a tendency to coldness of the extremities and dryness of the skin. At this early stage the child will not have the appearance of a typical cretin, but slight thickening of the subcutaneous tissues, especially of the face, neck, supraclavicular fossae, and backs of the hands, may be discernible. The bridge of the nose may be slightly depressed and the complexion is pale. On examination of the neck the thyroid gland will be found to be too small, or absent. The maladies which may be mistaken for cretinism are mongolism, achondroplasia, and rickets. When there is difficulty in making a diagnosis it is advisable to treat the patient as a cretin. If decided improvement soon takes place the diagnosis of cretinism is clear. In an early case a small dose of one of the preparations should be given each night. In a child under one year it is advisable to begin with a dose of 1 minim of liquor thyroidei or half a grain of dry thyroid powder and gradually increase it up to double or treble this amount during the first three weeks of treatment. Subsequent doses must be regulated according to the effect produced. In older children larger doses may be given from the beginning. In any case gradually increasing doses will be required as the child grows older so as to supply sufficient hormones to maintain the basal metabolic rate at the level necessary for full development to take place. In the adult, symptoms of thyroidal insufficiency are apt to appear between the ages of 40 and 50, and less frequently earlier or later than this period. As they are much more frequent in women than in men they are apt to be attributed to the changes in the ovary which occur at this time of life. As the thyroidal hormones diminish the basal metabolic rate falls and the patient complains of gradually increasing loss of energy. Greater voluntary effort is required to initiate any action and more time is taken up in its execution. This is shown in a slowness in response to questions, which are, however, answered correctly. Some patients, though conscious of their difficulties, continue for a time their usual occupations, others soon begin to limit their sphere of action and tend more and more to lead a sedentary existence. The memory may become defective, especially for new names and recent events. Sensitiveness to cold and ill-defined visual and auditory sensations or even hallucinations may be present. The temperature may be slightly subnormal. Slight myxoedematous swelling of the subcutaneous tissues can usually be detected. At first the slight fullness of the face, combined with the pink flush in the cheek may give a false impression of good health to the patient's friends.

Careful inspection of the eyelids, of the supraclavicular fossae and of the backs of the hands will generally show the true nature of the swelling. The skin becomes drier and perspiration occurs less frequently than before. A fine powdery desquamation occurs especially on the legs, and the hair becomes thinner on the head. The thyroid gland will be found to be diminished in size though it is not as yet shrunken as in fully developed myxoedema. It is much easier to supplement a deficient thyroid gland than it is to control one which is overactive, so that the treatment of these cases presents no difficulty once their true nature is recognized. Two or three grains of dry thyroid or five minims of liquid thyroid extract given each night will usually remove the symptoms in the course of a few weeks, though in some cases larger doses may be necessary. The daily dose must, of course, be continued for the rest of the patient's life, and it may have to be increased as time goes on, owing to the progressive atrophy of the gland and further diminution in its secretion of hormones. In time this may fail altogether, so that the patient is entirely dependent on external sources for an adequate supply of thyroidal hormones to maintain the basal metabolism at the normal rate, Advanced cases of myxoedema in which the symptoms have been present for years without suitable treatment unfortunately still occur, as I have seen two recently; both of them rapidly recovered when treated with preparations of the thyroid gland. In such cases the dose should be soon increased up to 10 minims of the liquid extract once a day, which usually suffices to keep the patient free from symptoms of the malady as long as it is continued. As as illustration of the long period for which health can be maintained by this means, it may be mentioned that the first case of myxoedema treated by thyroid extract, whose life-history I recently recorded,[3] lived in good health for over twenty-eight years, and only died last year from cardiac failure at the age of 74.

Thyroid extract has, however, other uses beyond the supplemental treatment of thyroidal deficiencies, which may be shortly considered. In the treatment of obesity it was expected to be beneficial, but it must be used with caution, and is of little service unless combined with dietetic and other measures directed to the reduction of excessive weight. In the treatment of some diseases of the skin, and especially in some cases of psoriasis, as was shown by Dr. Byrom Bramwell, the stimulating effects of the thyroidal hormones on the metabolism of the skin have a marked influence upon the course of the malady. In the treatment of chilblains I have found this influence of great value, and that it is increased by the simultaneous use of calcium salts.

Pituitary Gland.

The diseases of the thyroid gland have been considered first as they serve best to illustrate the principles which should guide us in the diagnosis and treatment of diseases of other endocrine glands. The pituitary gland is so inaccessible that no direct examination is possible. By the use of x rays a skiagraph may be obtained of the sella turcica, in which it lies. This gives useful information when there is a gross change in size, but is of little help in the early stages of either hypertrophy or atrophy of this gland. Owing to the confined situation of this gland any marked enlargement produces definite effects, which have been called "neighbourhood symptoms" by Cushing, so as to distinguish them from "glandular symptoms" due to changes in functional activity, so that in some cases tumour symptoms predominate and in others the glandular symptoms. When the hypophysis is large enough to cause pressure on surrounding structures the sella turcica is expanded and the patient complains of temporo-frontal headache, the fields of vision are diminished, and there may be partial bitemporal hemianopia and oculo-motor paralysis. Epistaxis and anosmia may also occur. These symptoms are mechanical in origin and occur independently of any glandular symptoms, just as in the case of the thyroid gland. The fully developed effects of prolonged hyperpituitarism, as seen in acromegaly in the adult and one form of giantism in the adolescent, are striking and well known, but it is much more difficult to recognize the early symptoms of overactivity of the hypophysis. Once the characteristic features of acromegaly have developed they remain permanently, although the gland may be no longer overactive, so that operative treatment at this stage at the best can only relieve pressure symptoms. If any treatment is to be effective it must be applied during the early stages of the malady, and it is for the symptoms of this stage we must learn to look. Dr. Leonard Mark[4] has given a good account of these symptoms as observed in his own case from the beginning up to the fully developed stage of the disease. The symptoms in his case first began to develop some thirteen years before their true nature was recognized. The earlier symptoms may be drowsiness, sense of fatigue, depression, post-nasal catarrh, and photophobia. To these sooner or later may be added the tumour symptoms already mentioned. The posterior lobe of the hypophysis influences metabolism, and it is probable that some of the early symptoms are due to the overactive stimulation of certain metabolic changes. Overactivity of the anterior lobe stimulates growth of the skeleton and cutaneous tissues. One of the earliest signs of this abnormal growth is the gradual advancement of the lower jaw until the lower incisors project in front of the upper, and biting the food is difficult. At the same time the nose and supraorbital ridges increase in size, and later the tongue becomes larger. Similar changes occur in the hands and feet, but these are difficult to recognize in the early stages unless the patient finds that he actually requires larger boots and gloves than formerly. The sugar tolerance may be diminished and there may be actual glycosuria. Thus acromegaly results from hypertrophy with hypersecretion of the pituitary gland, just as Graves's disease is due to hypersecretion of the thyroid gland. It is significant that both these maladies may occur simultaneously, but I have never seen myxoedema combined with acromegaly, nor Graves's disease with adiposo-genital dystrophy, so that overactivity of one of these glands is rarely, if ever, combined with loss of activity of the other. It is true that there is some enlargement of the pituitary gland in myxoedema, but this is probably a compensatory change, as there are no special symptoms referable to it.

The treatment of acromegaly is unsatisfactory. X-ray treatment of the enlarged hypophysis has greatly relieved the headache in some of my cases, but no other definite effect has been obtained. In an early case Dr. J. H. D. Webster[5] has observed disappearance of the headache, marked diminution of the depression and irritability, decrease of weight, improvement in the fields of vision, and return of the discs almost to a normal condition, though the symptoms returned later after the treatment had been discontinued. The results so far obtained warrant a prolonged trial of x-ray treatment in the early stages of the disease in order to check further enlargement and overactivity of the hypophysis. Surgical treatment is only advisable when the symptoms indicate that the intracranial pressure must be relieved so as to save the vision or relieve an intolerable headache. Treatment by any form of pituitary extract is contraindicated just as much as thyroid extract is in the treatment of Graves's disease. Beyond this, treatment must be directed to the relief of symptoms as they arise. The opposite condition of adiposo-genital dystrophy, which develops as the result of atrophy or destruction of the pituitary gland, is a rare but very interesting disease. Loss of function of the pituitary gland may be due to a primary atrophy comparable to the atrophy of the thyroid gland in myxoedema, or it may be due to secondary changes following a period of hypersecretion. A similar sequence of events takes place in the thyroid gland when Graves's disease is followed by myxoedema. When the pituitary secretion fails early in life growth is arrested, the bones are not fully developed, the external genital organs remain undeveloped, the secondary sexual characters do not appear at puberty, and the skin is soft and smooth. These defects are chiefly due to loss of function of the anterior lobe. In consequence of failure of the posterior lobe sugar tolerance is raised and the subcutaneous fat is largely increased. In the adult this development of obesity is a striking feature. The fat chiefly accumulates in the supraclavicular fossae, in the lower part of the front and sides of the abdomen, at the back of the arms, over the hips, and upper part of the thighs. The face, hands, arms, legs, and feet usually are little if at all affected. The distribution of fat thus resembles that seen in adiposis dolorosa, but it is painless. The sugar tolerance is increased so that in some cases as much as 400 grains of glucose, if the stomach will retain

it, may be taken without producing any glycosuria. The temperature tends to be subnormal and the pulse to be slow and of low tension. The metabolic rate was frequently found by Plummer to be as much as 25 per cent. below normal. The sexual power is diminished and there may be impotence in the male and sterility in the female, with atrophic changes in the external genital organs. The skin is soft, cool, and smooth. Polyuria occurs in some cases and so diabetes insipidus has been attributed to a deficiency of the posterior lobe, but recent investigations by Houssay and Leschke indicate that this malady is due to a lesion of the tuber cinereum rather than of the hypophysis itself. It is, however, to be remembered that the hypodermic injection of 1 c.cm. pituitrin every day or two often controls the polyuria for the time being, as a single dose has reduced the amount of urine passed in twenty-four hours from 13,000 c.cm. to 1,800 c.cm. the next day. It was naturally hoped that pituitary extract would be able to supply the missing hormones and remove the symptoms in these cases just as thyroid extract does so promptly in myxoedema. Some improvement does follow the administration of two or three grains of the whole dried gland several times a day. Cushing has found 12 grains three times a day necessary in one case to produce an improvement. The results have so far been disappointing, and clearly indicate that we are still unable either by oral or subcutaneous administration of pituitary extract to make good the loss of the special hormones secreted by this gland. Apart from these cases pituitrin has proved to be of service in raising blood pressure in cases of shock or heart failure and in stimulating peristalsis in inertia of the bowel. In obstetric practice also, as a uterine stimulant it is a powerful though sometimes dangerous therapeutic agent. It may be given subcutaneously in doses of 10 to 30 minims, or in the treatment of shock it may be added to an intravenous saline injection.

SUPRARENAL GLAND.

The normal suprarenal gland cannot be detected by physical methods of examination or by *x*-ray examination, and only tumours of these glands may be large enough to be palpable during life. Disease of the gland can therefore only be detected by a consideration of the symptoms which occur when the normal functions are changed by alterations in their structure or functional activity. The cortex and medulla have different functions. The medulla produces adrenalin, which has been shown by Langley and Elliott to be a powerful stimulant of the sympathetic system. The cortex is probably concerned with the development of the genital system. These glands, like those we have already considered, may undergo changes which lead either to excessive activity, on the one hand, or to loss of function on the other. We know very little of the results of overaction of the chromaffin tissue of the medulla with excess of adrenalin in the blood, though it has been suggested that it may be a factor in the production of the high blood pressure associated with granular kidney and other conditions. The overactivity of the suprarenal cortex which occurs in certain cases of hypernephroma in early life leads to a rare and interesting condition of precocious sexual development associated with somnolence. Destructive lesions of the suprarenal glands, most commonly due to tuberculous infection, cause the symptoms of Addison's disease, which are characteristic in the fully developed malady, but difficult to recognize in its incipient stages. The progressive asthenia, gradual fall of blood pressure, and pigmentation of the skin, and especially of the mucous membrane of the mouth, are the most helpful early signs of suprarenal failure. The treatment of suprarenal insufficiency is unsatisfactory, as we cannot as yet replace the lost function by the use of suprarenal extract in any known form, administered either by ingestion or injection, and I have not seen any definite improvement following this treatment in Addison's disease. Cases of recovery have been recorded, but it is possible that the symptoms have been due to loss of one suprarenal gland and have disappeared owing to compensation by the other gland. In a recently recorded case of recovery it was ultimately found that the symptoms had been due to a destructive lesion of one suprarenal gland. The value of adrenalin as a therapeutic agent is so well known that it is only necessary to mention its powerful local action in arresting haemorrhage from the skin and mucous membrane by causing constriction of the blood vessels, and its useful action in stimulating the heart and raising blood pressure when given intravenously in shock or in the collapse of toxaemic conditions. Liq. adrenalini hydrochlor. may be given subcutaneously in doses from ♏j up to ♏x for the relief of spasmodic asthma with marked benefit. Professor J. N. Langley has found that adrenalin also relaxes the oesophagus, and suggested to me several years ago that it would be well to try it in cases of spasmodic stricture. In adopting this suggestion the adrenalin has been given by the mouth, in the hope that its local action on the oesophagus would relax the spasm, so as to avoid the frequent repetition of hypodermic injections. In two recent cases of oesophageal spasm under my care at the Manchester Royal Infirmary the administration of ♏xv of adrenalin solution in half an ounce of water five or ten minutes before each meal has had a striking effect in relaxing or preventing the spasm, so that the patients were able to take their food without difficulty.

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A FATAL CASE OF MALIGNANT TERTIAN MALARIA CONTRACTED IN THE NORTH OF ENGLAND.

BY

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THE following preliminary note of a fatal case of malignant tertian malaria contracted in the North of England is recorded:

M. B., a girl typist, aged 18, a resident in Liverpool, was admitted in a moribund condition to the Royal Infirmary, Liverpool, at 4.30 p.m., October 12th, 1920, under the care of Dr. J. C. Matthews. The only history obtainable at the time was the following: The patient had been seriously ill for a few days; on account of delirium her doctors thought she might have meningitis. After a slight haemorrhage, apparently from the vagina, she was also seen by a gynaecologist, who diagnosed metrorrhagia, and, finding her profoundly anaemic and unconscious, sent her to hospital.

On admission the patient, a poorly developed girl, was *in extremis*, unconscious, blanched but not jaundiced, and pulseless. The temperature was 102.6°. There was no evidence of meningitis, nor of the exanthemata. She died two hours later.

The *post-mortem* examination was made twenty hours after death. Blood anaemic. Brain: apparently normal, no meningitis. Lungs: a moderate amount of oedema and muco-purulent bronchitis. Heart: weight 8 oz., normal, no fatty degeneration. Mouth: healthy, no trace of pyorrhoea. Oesophagus, stomach, and intestines opened from end to end—normal, no evidence of blood. Some of the lumbar lymphatic glands slightly enlarged, and red like haemolymph glands. Liver: weight 3 lb., slightly browner than normal, no haemosiderin reaction. Spleen: 1lb. 7 oz., retains its shape, of normal consistency, but dark, rather like malaria. Pancreas, suprarenals, kidneys and bladder normal. Uterus: normal size, but menstruating; one haemorrhagic corpus luteum. Bone marrow of the shaft of the femur a uniform terra-cotta red,* that of the sternum redder and more succulent than normal.

The salient features of the *post-mortem* examination were therefore the anaemia, the greatly enlarged spleen, and the marked erythroblastic reaction of the bone marrow. The patient's friends, who had very reluctantly granted the necropsy, demanded the death certificate before it was finished so as to obtain an order for burial before the registrar's office closed. A provisional diagnosis was therefore considered. There was no evidence of lecucythaemia—the spleen in particular was too small for the

* The colour closely resembled that shown by Carnegie Dickson in the transverse section of the bone marrow of the femur from a case of pernicious anaemia (Plate XI, Fig. 2). It was not so dark as the marrow from a case of acute streptococcal septicaemia (Plate XI, Fig. 1, W. E. C. Dickson, *The Bone Marrow*, Longmans Green and Co., London, 1908).

myeloid variety,* and the absence of greatly enlarged lymphatic glands negatived the lymphatic variety. The spleen was too small and not tough enough for splenic anaemia; besides, in our experience fatal cases of this disease are so rare, that there have only been three *post-mortem* examinations upon it in the Royal Infirmary during the last twenty years; all were adults and all were associated with cirrhosis of the liver.†

Therefore, to suit the convenience of the relatives, the death certificate was signed as "pernicious anaemia," but it was definitely stated in the *post-mortem* room that the macroscopic absence of fatty degeneration of the heart and of free iron in the liver, also the presence of a greatly enlarged spleen, made this diagnosis very unsatisfactory.‡ Though the spleen was noted to be "dark rather like malaria," the possibility of this disease was dismissed.

Films were next made of the blood; the spleen, portions of liver, and bone marrow were removed for further examination. The bone marrow was first investigated; a smear treated with alcohol and ether and stained by the Leishman method was found to contain pigmented parasite-like bodies. This was immediately shown to Dr. Blacklock and Professor Stephens of the Tropical School, who made a provisional diagnosis of malaria from the presence of pigment and of organisms resembling crescents. The blood films and smears of the spleen were next examined, and Professor Stephens found numerous segmenting malignant tertian parasites. An attempt was at once made to obtain portions of the brain,§ but the body had already been removed for burial.

At subsequent examinations of additional material numerous crescents were found in the bone marrow and a moderate number in the spleen and blood smears. Sections of the liver and spleen showed a moderate amount of melanin and numerous malaria parasites. The liver contained a minute trace of haemosiderin. The spleen was absolutely engorged with blood; there was no fibrosis. A differential count of a *post-mortem* blood film showed 10 per cent. polymorphs, 28.2 per cent. lymphocytes, 61.4 per cent. mononuclears, 0.4 per cent. eosinophiles—500 white cells examined. During this count 19 normoblasts but no megaloblasts were seen. The erythrocytes were deficient in haemoglobin; there was slight poikilocytosis, but no anisocytosis, and no polychromatophilia, nor punctate basophilia (J. C. M.).

Clinical History.

An investigation of the patient's past history was then undertaken by Drs. Blacklock and Matthews, and the following facts elicited:

The patient was born in Liverpool, and lived in the same house in the town for ten years. She was rather anaemic and liable to headache. She had not worked for about eight weeks—there was no necessity for her to work, and she was not very strong. On September 14th five or six teeth were removed under ether; there was little haemorrhage. On September 25th she went with her brother to a North of England health resort; though pale she was apparently active and well. On September 27th she spent part of the day in a valley which was subsequently found by Dr. Blacklock to harbour large numbers of hibernating larval and adult anopheles mosquitos. On September 29th she vomited once, but next day was apparently well, and went for a long walk. On October 1st she arrived home flushed and ill. For the next two days she remained in bed, vomiting occasionally. On October 4th she went to see a doctor. During the ensuing three days she was apparently better. On the 7th she felt faint. On the 8th, while walking in the street, sudden faintness came on; she asked a passer-by to take her home, and the doctor was sent for. She went to bed feeling very thirsty, but her head was clear. On the 9th she vomited; she became slightly delirious, got up, fell on the floor, and had to be carried back to bed; she said she could not move her legs. On the 10th she complained of very severe headache with photophobia, and was unconscious at intervals. On the 11th she was worse, and the haemorrhage occurred from the uterus. Her temperature, taken for the first time, was found to be 100°. On the 12th she was removed to hospital. At no time during the illness did she complain of shivering or sweating; there was apparently no diarrhoea, but there is some evidence that no urine was passed during the last two days of life.

This clinical history is consistent with a first attack of malignant tertian malaria of the pernicious type and algid variety.

The illness apparently lasted thirteen days. The absence of cellular hyperplasia and of fibrosis of the spleen and the comparatively small amount of melanin pigment in it, suggest an infection of recent origin; the absence of any obvious macroscopic lesion in the brain confirms this conclusion. On the other hand, the size of the spleen—namely, 23 oz., or 644 grams—suggests a subacute infection. Ross quotes Kelsch and Kiener, who "state that in eighty autopsies they found the weight to vary from 400 to 1,500 grams, and to average 914 grams (chronic malaria)." James, however, points out "that great splenic enlargement is a feature of many of the cases which occur in children of simple tertian malaria in England"; though our patient was not a child, she was only 18.

The development of the erythroblastic reaction of the bone marrow is remarkably rapid, but Carnegie Dickson shows a coloured drawing of the femur from a case of pneumonia of five days' duration in which nearly all the yellow marrow has been replaced by red marrow (Plate IX, Fig. 1.)

The Place of Infection.

Dr. Blacklock found no mosquitos in the house where the patient lived. She was, however, accustomed to walk in one of the parks and country round Liverpool, in which district anopheles mosquitos occur. A full account of the parasites, of the histology and of the mosquito survey, together with a discussion of certain problems connected with this case, will be published subsequently by Dr. Blacklock in the *Annals of Tropical Medicine and Parasitology.*

Malaria in England.

James (1920) refers to the special inquiry into indigenous malaria. He states that 330 cases occurred "from September, 1917, to the end of 1918—38 in the navy, 224 in the army, and 68 in civilians." The most northerly case occurred in Grimsby. "In 1918 about 85 per cent. of the cases were detected during August and September." He further "states that all the locally contracted cases of malaria so far reported in this country have been infections with the benign tertian parasite," also that "no death occurred." A few cases of malignant tertian have been noted in France. Lastly, he states that "among the civilians who contracted malaria in England between 1917 and 1919 no fewer than 75 per cent. were children." It appears, therefore, first, that the patient contracted the disease either about or beyond the reported northern limit of indigenous malaria in England; second, that it is the first case recorded in recent years in England of indigenous *malignant tertian* malaria, and of *fatal* indigenous malaria. It is very probably not the only case of malignant tertian malaria which has recently occurred in England.

Other "Foreign" Diseases Contracted at Home.

It is interesting to observe that other infective diseases besides malaria* are now recognized to develop not infrequently at home, which were formerly thought to be practically confined to foreign, particularly tropical, countries. Perhaps we may be allowed to refer to our own recent experience, which doubtless agrees with that of others.

1. *Paratyphoid Infections.*—The agglutinative capacity of the blood of 40 uninoculated civilian hospital patients

* The average weight of the spleen in five consecutive necropsies at the Royal Infirmary on adults with myelogenous leukaemia was 92 oz., the minimum being 48 oz.

† The average weight of the spleen in these three cases of splenic anaemia (Banti's disease) was 73 oz., the minimum being 35 oz.

‡ The average weight of the spleen in ten consecutive necropsies upon adults with "pernicious" anaemia was 7¾ oz.; the two maxima being 14½ and 13¾ oz., and the minima 4 and 3 oz.; in every case there was a marked haemosiderin reaction in the liver and extensive fatty degeneration of the left ventricle, and the bone marrow of the shaft of the femur showed, when examined, an erythroblastic reaction.

§ In view of the importance of this case it seems advisable to state that I have only made one other examination upon a fatal case of malaria—namely, the following: On October 23rd, 1915, a sailor, aged 35, from an unknown port, with no clinical history, was brought into the hospital moribund and died immediately. At the *post-mortem* examination the cerebro-spinal fluid was pale yellow. There were small brownish-red subpial haemorrhages, one in particular about three-quarters of an inch in diameter on the superior surface of each cerebral hemisphere; small punctiform haemorrhages were also present on the dura mater of the anterior fossa. Sections of the brain showed that the capillaries were loaded with malaria parasites. Professor Stephens confirmed the diagnosis of cerebral malaria. The spleen was 1 lb. 9 oz., firm and dark chocolate colour. The liver 3¾ lb., very dark brown. A microscopical section of both organs showed considerably more melanin pigment than was present in the girl. The bone marrow of the femur was yellow, slightly tinged with red. If there had been any *obvious* macroscopic changes in the brain of the girl they would have been noticed. (E. E. G.)

* Malaria, of course, was once endemic in England; there has been a recrudescence of it owing to the war.

suffering from "enteric" (?) was recently tested. In 15 there was no agglutination; 20 gave evidence of a pure typhoid infection, but 5 gave evidence of a pure paratyphoid B infection. Further, in two other cases of acute pleural effusion in civilians, paratyphoid B bacillus was isolated from the exudate.[1]

2. *Bacillary Dysentery.*—This was formerly thought to be confined to asylums, yet Flexner Y bacillus was isolated from a boy with acute diarrhoea, and from two out of 504 healthy recruits in a training camp; Shiga's bacillus was isolated from the spleen of a woman who had always lived in Liverpool, and who died of puerperal sepsis, but was found *post mortem* to have chronic ulcerative colitis.[2]

3. *Amoebic Dysentery.*—Fifty-nine patients in an English asylum suffering from acute dysentery were examined for protozoa, "in 3 cases vegetative *Entamoeba histolytica* were found in the stools."[5]

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MINER'S NYSTAGMUS: SUGGESTIONS FOR ITS PREVENTION.

BY

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Some suggestions I made to Mr. T. H. Mottram, C.B.E., Divisional Inspector of Mines for the York and Midland Division, with the object of reducing the amount of miner's nystagmus in our coalfields, were embodied by him in his annual report for 1919. Further inquiry has strengthened my opinion that the only way to eliminate the "grave," or what might be termed "compensation," cases of miner's nystagmus is by some such method as therein outlined, and, as the outcome of an informal conversation with Dr. J. S. Haldane, I have endeavoured to state the case somewhat more fully in the following article.

The importance of removing the personal factor in the causation of the disease has been somewhat overshadowed by concentration of thought and effort on removal of the external exciting factors. Inquirers have centred their researches on questions of posture and illumination; that is, attempts have been made to eliminate nystagmus by improving the conditions in the mine instead of preventing the man who is predisposed to the disease from entering the mine.

No man the refractive condition of whose eye is normal will develop miner's nystagmus to such an extent as to incapacitate him from following his employment as a miner. Of this I am persuaded from investigations among men suffering from miner's nystagmus in the Doncaster area.

Astigmatism is by far the most frequent predisposing cause of miner's nystagmus, and the greater the degree or the more marked the abnormality, the more susceptible will the subject be when exposed to the exciting factors of this disease. A subject with mixed astigmatism in oblique meridians will almost certainly develop the disease when exposed to the conditions of a collier's life. Simple refractive errors, myopia and hypermetropia, also act as predisposing causes, though to a much less degree.

Most observers are agreed that ametropia is the rule in cases of miner's nystagmus. Various authors have published figures ranging from 90 per cent. downwards, but my experience has led me to believe that unless nystagmus is associated with ametropia it will not be so grave in type as to incapacitate a miner from following his occupation. Severe nystagmus may, of course, be due to the other known causes of the condition, such as affections of the cerebrum or cerebellum, diseases of the labyrinth, sclerosis cerebri, etc.

Age as a Factor in the Production of Miner's Nystagmus.

In my series of cases the highest age incidence was 40 to 44, as shown in Table I; the explanation is that physiological changes are then occurring in the lens resulting in presbyopia. This imposes an additional strain upon the neuro-muscular mechanism concerned in accommodation and convergence. Given, then, that there exists an error of refraction as mentioned above, the disease will be particularly prone to manifest itself at the age of presbyopia. That this should be so lends support to the theory that an error of refraction is an essential factor in the production of the disease.

TABLE I.—*Age Incidence of Miner's Nystagmus; showing Number affected in Five-yearly Age Groups.*

Age 20–24	3
25–29	3
30–34	10
35–39	16
40–44	24
45–49	19
50–54	16
55–59	8
60–64	2

Length of Colliery Life as a Factor.

Length of life as a collier bears no direct relation to the incidence of miner's nystagmus. It is not a matter of surprise that miners who have a long record of life underground should have a high incidence of nystagmus, as shown in Table II. As presbyopia increases so does its influence as a factor in the production of nystagmus when the eye is ametropic; and the greater the abnormality of refraction the greater the influence.

TABLE II.—*Showing duration of Work in Collieries in Five-yearly Groups and Number of Men with Nystagmus.*

1 to 5 years	2
6 to 10 ,,	4
11 to 15 ,,	9
16 to 20 ,,	12
21 to 25 ,,	12
26 to 30 ,,	19
31 to 35 ,,	16
36 to 40 ,,	11
41 to 45 ,,	5
46 to 50 ,,	2
51 to 55 ,,	1

Heredity as a Factor.

Other observers have found a hereditary history of nystagmus in as many as 20 per cent. of their cases. In my opinion it is not nystagmus that is hereditary, but the refractive error. Similar errors of refraction are commonly found in parents and children. What more natural, then, than that with the transmission of an error of refraction there should be associated a tendency to miner's nystagmus? The latter disease is thus not in itself hereditary, but the refractive errors—the personal predisposing causes of miner's nystagmus—are markedly so.

Classification of Causes.

The chief factors which result in the production of miner's nystagmus are thus:

Predisposing.

1. *Errors of Refraction.*—These, when associated with the conditions of a collier's work, may result in miner's nystagmus at any age period. When this occurs in early life the astigmatism present is usually severe in type or abnormal in character.

Exciting.

(*a*) *Presbyopia.*—This has a marked influence upon ametropic eyes in the production of nystagmus when associated with the conditions peculiar to coal miners' work.

(*b*) *Defective Illumination, etc., in Coal-mining Work.*—This in itself cannot create "grave" miner's nystagmus in an emmetropic eye.

If we accept the theory that refractive errors are the main predisposing causes of the affection we should exclude men who have certain types of ametropia from following the occupation of a miner. In the great majority of employments the eyesight of young persons has to be tested before commencing work. This ensures correction of errors of refraction, whereas the eyesight of the collier is seldom if ever examined or corrected until the onset of disease renders it imperative. It is easy to understand how, in a man affected with uncorrected ametropia, the defective lighting of a coal mine and the posture at work would impose an additional strain upon the ocular muscles.

Improvement in the illumination will unquestionably reduce the strain and at the same time the incidence of nystagmus, but will never stamp out the disease from our mines whilst refractive errors exist amongst the colliers.

Types of Nystagmus found in Miners.

Two chief types occur—the minor, latent or transitory, mild in character and degree, and the major, incapacitating, grave type. The minor type, which does not incapacitate a man from his work, exists in a very considerable proportion of men employed at the coal faces, whereas the major type occurs in less than 1 per cent. of men similarly engaged. In each there are two principal personal factors in production: (*a*) Refractive errors, structural and other defects of the eye; (*b*) abnormalities of the neuro-muscular mechanism of the eyeball. When these conditions are slight the minor type as a rule results, when marked the major type. In no other employment do we get the same combination of exciting factors; defective illumination I have no doubt is the most important, and great improvement has been made in this respect; but there has been no advance in the removal of the personal predisposing cause of the disease, and without this we can hardly hope for success. It seems essential to establish a refraction standard for miners, and thus prevent men from taking up a form of employment totally unsuited to their physical powers. By this means we can eliminate the major cases of disease from the mines, and although the minor types may occur they will be reduced in severity and in frequency.

A Fixed Refraction Standard for Coal Miners.

The benefits derived from a fixed refraction standard would be:

1. *To the Individual.*—(*a*) A man would be prevented at the beginning from following an employment for which he was unsuited, and which sooner or later would prove detrimental to his health and his life prospects. (*b*) He would at an early age, if ametropic, come under the observation of a skilled oculist, and would thus learn the importance of correctly adjusted glasses and save his eyes from further injury. (*c*) The standard would eliminate these distressing examples of miner's nystagmus, who tend to become a burden to themselves, being unable to work as miners and unable or unwilling to follow other occupations. (*d*) It would tend to prevent injury to other workmen. The man with marked refractive errors is a source of danger to his fellow workers.

2. *To the Owner.*—(*a*) There would be a saving in the money expended on compensation, as the major types of the disease would be kept out of the mines. (*b*) The standard would tend to prevent accidents. (*c*) It would enable better coal to be got, "the men being able to see whether they are filling coal or dirt," as Sir Arthur Markham put it.

3. *To the Nation.*—(*a*) It would exclude men from unsuitable employment. (*b*) It would protect the eyesight of the nation, giving useful instead of handicapped men in other employments. (*c*) It would tend to reduce poverty, disease, alcoholism. (*d*) It would give a higher average output of coal per man.

Standard Suggested.

The standard which I would suggest for admission to pit life is the ability to read Snellen $\frac{6}{12}$ at twenty feet with each eye separately or Snellen $\frac{6}{12}$ (at least three letters) with both eyes at twenty feet. In the event of failure to pass the above tests the man would be referred to the certifying factory surgeon, who should have a knowledge of eye work. With a considerable amount of hypermetropia or myopia (which might be arbitrarily fixed at 1 D) the man's attention would be directed to the abnormality, and such abnormality noted on the register. Although he might not be excluded from work as a miner, he would be advised to seek other employment, and to wear suitable glasses. If the error of refraction exceeded 1 D hypermetropia or myopia, or if astigmatism was present, the man would be excluded from work as a coal miner.

These suggestions as to standard are only intended as provisional, and could be modified in the light of experience.

COAL MINER'S NYSTAGMUS AND ITS PREDISPOSING CAUSES.

BY

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Coal miner's nystagmus is a disease which, owing to its most obvious sign being oscillation of the eyeballs, has been most discussed by the ophthalmological sections of our medical societies and only rarely considered, as I believe it should be considered, as a functional disease of the nervous system. Nystagmus is only one of its signs and that one not necessarily always the most prominent.

The disease is essentially one of exhaustion. First the visual centres and then the higher centres become worn out by constant effort. Any one who is doing much work on pensions boards and at the same time is engaged in colliery practice, cannot fail to be struck by the similarity between cases of nystagmus of the coal miners and anxiety neurosis of the war-strained. Each is a replica of the other, the only difference being the accentuation of the signs in the latter. Each has the same nervous, depressed and often haunted aspect; the same loss of self-confidence; the same fine general tremor; the same alteration of reflexes. (In bad cases of miner's nystagmus the accommodation reflex is sluggish.) The same headaches, giddiness, and at times fear of the dark. In each the blood pressure is often abnormally high. Cases of miner's nystagmus may remain latent for years, so long as the disease of the eyeballs is the only sign of the disease. It becomes manifest so soon as tremor of the head or general tremor begins—for example:

Case 12.—Stallman, aged 56; examined March 24th, 1909. Nystagmus, but no tremor. Is still working regularly.

Case 20.—Nystagmus, but no tremor, for seventeen years. Tremor first noticed April 17th, 1913. Refused to give up work until June 17th, 1918. A hard worker and a hard drinker. Is now working in a candle pit.

Case 24.—Stallman, aged 56; examined January 9th, 1911. Nystagmus, but no tremor. No complaint except that the right eye was weaker than the left. Worked regularly until he "retired" two years ago. Re-examined October 20th, 1920: no nystagmus.

The subjective distress is not proportional to the extent of the nystagmus, its rapidity, or amplitude, but is to the accompanying nervous symptoms. Some of my cases, in which time has shown the prognosis to have been bad, have had nystagmus of such small amplitude that it has been difficult to detect it without the ophthalmoscope. But the nervous symptoms, particularly tremor, have been very obvious. This tremor is so very fine that it is impossible of simulation by voluntary effort, and is easily distinguished from the coarse head-wagging of the "income neurotic." These men complain just as much of "dancing lights," or of the "lamps going round in a circle," as do those with nystagmus of coarse amplitude.

That the exciting cause of the disease is deficiency of light is now generally admitted,[1 and 2] but what are its predisposing causes? And can anything be done to diminish or remove at least some of them?

Bad ventilation in the mines, or the breathing of gases given off by the coal, or the result of shot-firing can be ruled out.[1] Ventilation is more efficient than ever it was, yet the cases do not become fewer. The balance of informed opinion appears to be that errors of refraction do not influence its incidence.[3] I believe the main predisposing causes are as follows:

1. *Nature of the Work done.*—Stallmen (that is, the actual coal-getters) suffer in the highest proportion; they constitute 88 per cent. of my cases. The greatest strain falls on them. They, as a rule, work harder than the drivers, loaders, or dateliers, and their vision is more strained; in addition they are responsible for the safety of those working in the stall with them.

2. *Excess of Alcohol and Tobacco.*—As regards the latter, the excess is especially of the cheaper brands of cigarettes. As for the former, nystagmus is often worse on Mondays, and many latent cases become manifest after bank holidays.

3. *Illness.*—Several cases followed attacks of influenza during the recent epidemic.

4. *Accident*, especially to the eye—for example:

Case 6.—Injury to the right eye, July 14th, 1909; manifest nystagmus, September 30th, 1909. Oscillation more marked on the injured side.

Case 21.—Injury to the left eye, February 11th, 1910; scar across iris; manifest nystagmus, July 23rd, 1910. On converging eyes, nystagmus on the injured side only; on divergence, both sides, beginning a few moments after fixation.

Case 115.—Foreign body in the left cornea. Then found to have latent nystagmus, which became manifest nine days later.

5. *Heredity.*—In one rural district which I know well there are three large groups of families—I will call them A, B, and C—all the male members of which are miners and who work, or have worked, at the same colliery.

In group A there has only been one case of nystagmus in the last twenty-five years—namely:

Case 37.—First examined February 22nd, 1912; his age was then 37; he had worked in the pit for twenty-eight years, as a stallman for thirteen of them. He had well marked nystagmus, but in spite of this he worked regularly until recently, when he had a severe accident. Since then he has been disabled.

There are three generations of this group. The first is now represented by an old man, who still works regularly and hard, but drinks even more regularly and harder. The second generation also work well, but are all very temperate or total abstainers.

Groups B and C tell an entirely different story. So far as I have been able to find out, and I have made careful inquiry and examination where possible, there are no members of group C, and I think none of group B, who have worked in the mine all their working lives and are over 25 years of age, who are not suffering from latent or manifest nystagmus.

Also the disease is more severe in the younger generation than in the older. The first generation of group C is represented by several brothers and two sisters. Apparently the tendency to the disease is transmitted as readily by the mother as by the father.

6. *Exhaustion*, due to want of food and prolonged strain without rest, is, I believe, the most important, most effective predisposing cause of the disease. The miner's habits and their relation to his day's work must be considered. As a general rule he takes very little breakfast. Even when he says he always has a good one, he means a piece or two of bread-and-butter or of toast and a cup of tea. He then starts out to work at a period varying from 5 to 7 a.m., the time depending partly on the distance of his home from the pit and partly on the nature of his work. He works, and as a rule works hard, straining his eyes all the time, until 11 a.m., when he has a quarter of an hour's rest for food. By this time he is hungry perhaps, and bolts a good deal of food in a few minutes; then he at once sets to work again in a more or less cramped position if a holer, or continually stooping if loading, until 2 or 2.30 p.m. He gets home at from 3 to 4 in the afternoon, and then has his first decent meal of the day. This is bundled into an exhausted stomach, washed down with tea *ad lib.*, and followed later on by a pint or two of beer, and then supper. Is it any wonder that he suffers from indigestion more and more commonly; that he gets exhausted; that his eyes and his nervous system, on which the greatest strain of his work falls, become affected; and that nystagmus, at first latent then manifest, follows, and the man's usefulness as a miner comes to an end?

The Eight Hours Act came into force in January, 1908. Before then the miner had forty minutes' rest in the middle of his working day. He was able to take his food in comfort, and to give his eyes a substantial rest. Now he has fifteen minutes! Digestion had a chance to at least begin before he restarted work. Before 1908 miner's nystagmus in the lamp pits of this district was far from common. At that time I was surgeon to seven colliery companies, and did not see more than five cases of nystagmus a year. The number was five in 1908. In the first seven months of this year (1920) I had fifteen new cases from one colliery alone, and not all the cases now occurring at that colliery come under my care. The number of cases is steadily growing, and, what is worse, I believe the average age at which incapacity to work underground begins is becoming lower. Of the last thirty cases I have had under my care or examined, eight have been 50 years or over, and twenty-two under 50.

The disease is a serious one for the miner and for the industry. It is becoming more so. Good electric lamps are already in use in most of the lamp pits of this district, though their introduction in large numbers is of too recent a date to form any conclusion as to their value. They should be a great help. But I am convinced that to get rid of miner's nystagmus, not only is better lighting necessary for the men while at work, but they must have a reasonable time for rest and food in the middle of their day's work. Forty minutes would only mean their being in the pit for half an hour longer each day—seven and a half hours in all. Why should not the experiment be tried at a few mines? The results would be interesting. The ordinary man has an hour in the middle of his working day for rest and food. Give the miner the same, or as near it as possible. Exhaustion is the explanation of some of the absenteeism we hear so much about nowadays. A miner with indigestion is a miner with exhaustion, and is therefore a candidate for nystagmus. And, quite incidentally, is a man with indigestion ever a contented man?

REFERENCES.

[1] Oxford Ophthalmological Congress, July, 1912. [2] Miner's Nystagmus, T. Lister Llewellyn. [3] Cridland, Oxford Ophthalmological Congress, 1912.

TREATMENT OF RHEUMATOID ARTHRITIS BY VACCINES.

*NOTES OF ONE HUNDRED AND FORTY-THREE CASES.**

BY

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THERE is no satisfactory definition of rheumatoid arthritis. Nor is a universally acceptable definition possible until the pathology has been worked out and opinion is more settled as to what really constitutes this disease. No definition will therefore be attempted here. But for the purpose of this paper the great majority of the cases may be taken as conforming to the usual conception of rheumatoid arthritis.

Essentially it is a disease presenting trophic disturbances as one of its most characteristic features. Later manifestations include changes in the joints of a degenerative nature. Swelling of the periarticular structures is a constant sign of activity. Anaemia, cyanosis, muscular degenerations and contractures complete the final picture.

The cases extend over the period from December, 1910, to the present time, excluding the last three years of the war. Fifty-two were not seen personally, but pains have been taken to make as certain as possible that these were cases of genuine rheumatoid arthritis. With few exceptions the remainder received treatment for longer or shorter periods at the hands of the writer.

A critical review of the literature recording vaccine treatment is much hampered by the difficulty of definition. It is also unfortunate that authors for the most part have been content only to publish their successes. This is misleading, for the fact is that hitherto the application of vaccine therapy to rheumatoid arthritis has given but few encouraging results. Those that have been successful, almost without exception, fall into one of two groups: either a focus of infection has been found and vaccines have been made from the germs present, or such large doses of vaccine have been given that the effect may well have been entirely non-specific, as in the method of protein shock.

Previous to 1912 a few reports had appeared. Bannatyne and Lyndsay[1] isolated organisms from the blood of two cases and treated them successfully by autogenous vaccines. The organisms grew in clusters and were presumably staphylococci. This is interesting in view of Case 1 described below. Lyon Smith[2] treated four cases by a vaccine of a small streptococcus. Ball[3] ascribed the cure of four cases to a vaccine of a mouth streptococcus. In America Painter[4] treated nine cases with a bacillary organism without improvement, though exacerbations followed the injections. This is one of the few recorded instances of failure. In his Hunterian lecture of 1911, Goadby[5] records forty-nine cases of fibrositis and arthritis. There is no attempt to differentiate the diseases further, but the symptoms of each are carefully described and it is

* Read before the Therapeutic Section of the Royal Society of Medicine, November 16th, 1920.

clear that some of the cases in his groups A and C were rheumatoid arthritis. Goadby considered his *Streptobacillus malae* to be causative in the great majority, and an autogenous vaccine of this organism was given in doses of from 10 to 200 million. Oral sepsis was treated radically. A fair proportion were cured or improved. In 1912 Horder[6] gave a useful warning against the indiscriminate use of vaccines in the disease, which is evidence of some misplaced activity in this direction. Possibly he had been struck by the extreme sensitiveness of rheumatoid cases and the disastrous results which were found to follow excessive dosage. A few other reports appeared about this time but the diagnosis of rheumatoid arthritis is doubtful.

Efforts to treat the disease were encouraged by good results in other forms of arthritis, as reported for example by Collins.[7] Sherman[8] described his own work in America and referred to that of his brother. These observers had good results by using alternately 30 million of a small streptococcus and 100 million of a mixed staphylococcus vaccine. Their method seems to have been empirical. From the size of the doses it is almost certain that the response was not specific. Greene[9] reported success from a vaccine made from two organisms isolated from the blood—the one a bacillus similar to Blaxall's and the other a diplococcus resembling that described by Poynton and Payne. In 1913 there were several contributions, notably by Hughes,[10] Veitch,[11] Wynn,[12] and Rowlands.[13] These writers all agree that to find a focus of infection, treat that radically, and to use an autogenous vaccine gives the best chance of success. In the absence of any discoverable focus vaccine treatment had failed. Stock vaccines had not been of use. Wynn, like Goadby, lays particular stress on oral sepsis.

So far, then, opinion seemed to be crystallizing in favour of the radical and specific treatment of an infective focus. In the absence of a focus vaccine treatment was not successful. The inference drawn by a good many writers was that rheumatoid arthritis might be due to many different organisms, or from absorption of toxins from the colon.

In 1913 I described a new organism,[14 15] and Soltau[16] treated four cases by means of a stock vaccine with excellent results. This was the first time that small doses of a stock vaccine had been successful. The only other observer who claims to have isolated a specific germ recently is Vipond,[17] who gets it from the juice of enlarged glands, which he finds to be a constant feature of rheumatoid arthritis. Protein shock therapy has had a good many adherents, though not always under that name. Several French writers have claimed a measure of success by injecting large doses of tuberculin. Oppenheim and Laing[19] gave a tuberculin test to 49 cases of severe arthropathies. A positive tuberculin reaction occurred in every one with one or other of the three doses. The last dose was 1 mg. A "joint reaction" was noticed in 25 per cent. The claim was made that a large proportion of arthropathics are tuberculous in origin. Two cases out of eighteen treated by increasing doses of tuberculin showed definite improvement.

The modern methods of protein shock do not come within the scope of this article; yet, from the fact that an injection of 150 million typhoid bacilli caused focal joint reactions in rheumatoid arthritis (Miller and Lusk), it is clear that such reactions do not necessarily indicate that a vaccine is specific. Professor Hastings,[20] however, considers that reactions following small doses are strong evidence of specificity in the vaccine. That the organisms he employed were specific was established, in his view, by positive complement deviation tests. Though doubt must certainly exist as to how far a focal reaction can be taken as evidence of specificity, it is clear that the smaller the dose the greater the probability that such a response is evidence of the injection of a homologous toxin. Fairly frequently, in mixed infections, where two vaccines are being used alternately, their action seems to be selective. A striking example of this occurred in the practice of the writer.

In 1912–13 a lady was receiving inoculations for muscular rheumatism and brachial neuralgia. In the urine were found a typical faecal streptococcus and the *M. deformans* (Crowe). Vaccines of each were given separately. After deformans vaccine the patient used to complain of "the burning pain in the arm," and after the streptococcal vaccine the "rheumatism" was worse. The sequence was then varied without informing the patient. Thus on January 9th and 23rd 1 million streptococci were given and on the 16th and 20th 1 million deformans. On each occasion the patient knew from her sensations which was the vaccine. On the 27th carbolized saline alone was injected. Following this the patient's words were: "I'm afraid you've stumped me this time, as I did not notice any reaction at all," which testified both to the patient's honesty and to the actuality of the symptoms. Appearances in this case were decidedly in favour of the vaccines being specific.

The basis of the treatment in this series was the hypothesis put forward by the author in 1914.[15] Briefly stated, it was that rheumatoid arthritis was primarily due to an organism, the *Staphylococcus epidermidis albus* (var. *deformans*); that, just as in tuberculosis, there were present in the majority of cases secondary infections, with or without a local focus; that it was these secondary infections which caused the variety of joint manifestations; that where the radical treatment of a local infective focus, with or without vaccines, resulted in amelioration or cure of the disease, the explanation was that the system, relieved of some of its microbic enemies, had then been strong enough to overcome the primary organism; and, finally, that the *M. deformans* or its toxin acted primarily on the nervous system and was responsible for the neuropathies which are the predominating, if not the sole, symptom of uncomplicated rheumatoid arthritis.

All the cases were treated, without exception, on this hypothesis, and no other treatment was given to any of the successful cases, with the exception of simple symptomatic measures, such as occasional aspirin for the relief of pain and latterly some mild hydrotherapy (Cases 109 to 143). Deformans vaccine was given to every case. Although some nine years have elapsed, the same vaccine is still in use with no apparent deterioration. It was prepared originally from two strains as described in a communication of 1913.[14] This vaccine was either combined or given alternately with autogenous vaccines when a definite infective focus was found, or if the urine was infected. When the symptoms were such as to suggest a coincident rheumatic infection, then a streptococcus vaccine was also given prepared from a large number of strains isolated from severe cases. None of the strains were isolated from joints, but from such conditions as acute nephritis with joint swellings and strepto-bacteriuria, and acute tonsillitis and rheumatism. No pyogenic streptococci were combined in the vaccine, but all conformed to one or other of the alimentary types.

Results.

One hundred and seven cases were treated more than four years ago, 36 recently. The earlier cases have been tabulated under fifteen headings: (1) Number and initials of patient and doctor in charge; (2) sex; (3) age; (4) length of history; (5) condition when starting treatment and date; (6) bacteriology; (7) vaccines employed; (8) dosage of vaccines; (9) whether sensitiveness developed; (10) length of treatment; (11) immediate result; (12) condition a few weeks after cessation of treatment; (13) relapse and if vaccines readministered; (14) condition in 1920; (15) abstract of results. With regard to the condition a few weeks after cessation of treatment, it has been noticed that in some sensitive cases where treatment was stopped because the patient seemed to be getting worse, a few weeks later symptoms had so far improved that the verdict was completely reversed.

To judge of the result of treatment each patient has been placed in one of six classes. Class I comprises all those who were cured as far as cure was possible. Cure implies the complete absence of any signs or symptoms of active disease, together with a return to a fairly normal life. Further than this, the condition of cure must be maintained—that is, either no relapse at all or only very slight, or having relapsed, returned for treatment and again got well. Class II: Cured, yet relapsed seriously, but with more than twelve months' good health, or very greatly improved and ground well maintained for some time. Class III: improved definitely, but may have relapsed again soon. Class IV: Not improved, no worse. Class V: Definitely worse after vaccines. Class VI: Data insufficient to justify classification.

Rather than incur the suspicion of describing only selected cases, every case known to the author, which has been treated by his vaccines has been entered in the table,*

*Difficulties of publication prevent the insertion of the table in the JOURNAL. A copy can, however, be seen on application to the author, who hopes to publish the table in full elsewhere at a later date.

even though in a few the particulars are too meagre to be of any interest. Largely owing to the war, too, about 40 per cent. of the earlier cases have been lost sight of. No particular sequence has been observed in drawing up the table, but patients have been grouped as follows; Nos. 1 to 8 are monarticular cases. Nos. 9 to 71 comprise those whose notes are fairly complete. These are again subdivided into two subgroups according to the severity of their symptoms. Nos. 72 to 108 are incomplete, and Nos. 109 to 143 are recent cases arranged in chronological order.

The strain of the war has put the final result of treatment to a severe test. Mental strain is recognized by all authorities as a frequent contributory factor in this disease. It is known that several relapses dated from the shock of losing relatives. The first case, which has already been published,[15] was an acute monarticular inflammation in the right knee-joint, associated with brachial neuralgia. Fluid obtained from the joint was sterile. *M. deformans* (Crowe) was isolated from the blood. A vaccine was successful. For five years the patient suffered no relapse and as far as is known has remained well to the present day.

The other monarticular cases on the whole responded badly. Three only obtained some measure of relief. In two of them the result was undoubted. There has been no relapse in one, where the shoulder was affected, though five years later osteo-arthritis developed in another joint. The subsequent history of the other is not known.

Nos. 9 to 39: General rheumatoid arthritis, not severe; histories and notes fairly complete. The abstract of results places 15 in Class I, 8 in Class II, 3 in Class III, and 5 as failures in Class IV; 26 out of 31 showed definite improvement; 8 are still free from symptoms; the remainder have suffered some degree of relapse; 3 remained free for more than four years, 3 for three years, and 6 for about two years. It is almost certain that a renewal of treatment, when the symptoms reappeared would have met with success. Two patients came back for treatment recently, and the result justifies this assumption. Both had tried other vaccines during the war without success. Both commented on the immediate effect of deformans vaccine.

Nos. 40 to 70: Severe general disease; notes fairly complete. Results: Class I 8, Class II 12, Class III 3, Class IV 5, Class V 3; 23 out of 31 definitely improved, though 2 relapsed within a year; 1 relapsed only after six years, 4 others held their own for two, three, four, and five years respectively. Of these one (51) who was an absolutely helpless cripple, and had even to be fed, and who regained most of her powers of movement, has recently had another course of vaccine with complete success. One case had no sign whatever of rheumatoid arthritis up to the time of her death five years after treatment. Five are reported as still perfectly well.

Nos. 71 to 108: Particulars incomplete. In this group are the greater number of those not seen personally. Results: Obviously none can be placed in Class I; 6 are found in Class II; 6 in Class III; 5 in Class IV; 1 in Class V; and 20 in Class VI, which it will be remembered are too incomplete for a judgement to be formed.

Nos. 109 to 143 are the recent cases. To suit these the method of tabulation has had to be altered. Final results are omitted, and the results have been abstracted under four classes only:

Class A.	Treatment markedly successful	... 16
„ B.	Treatment giving a fair measure of success	... 6
„ C.	No improvement	... 3
„ D.	Insufficiently advanced for a judgement to be formed	... 10

In two of those in Class C the treatment had to be given up owing to the extreme degree of sensitiveness which developed. It is hoped to resume again later.

Data Extracted from the Tabulated Cases.

Males, 18.44 per cent. Females, 81.66 per cent.

Ages.	
Under 20	1 case
20 to 30	8 cases
30 to 40	21 „
40 to 50	33 „
50 to 60	28 „
60 to 80	24 „

That the age of the patient had some influence on the probabilities of cure is clear from the chart, where the three middle decades, in which the numbers are approximately equal (of those providing a final result), are divided by ordinates, the number of cases as abscissae, and curves of the various classes are plotted. From the age of 50 to that of 69, Classes I and II are at their lowest, whilst Classes III and IV (with V) are at their highest.

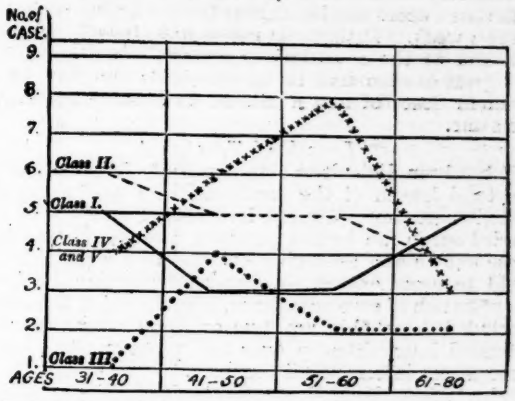

Chart showing relation of patient's age to results of treatment.

Etiological Factors.

In the majority none could be detected. The disease dated from marriage in three, from parturition in three, menopause in two, and hysterectomy in one. Rheumatism, either acute or chronic, preceded the condition in six, nasal catarrh in three, definite pyorrhoea in four. No doubt many others had had pyorrhoea. It was remarkable how many had had all their teeth removed years before ever the rheumatoid arthritis developed. Three patients ascribed the onset of the disease to being run down through nursing sick relatives. Seven cases began with neuritis or sciatica.

Other exciting causes given were bronchitis, malaria, accident, mental shock, exophthalmos, tonsillar trouble, scarlet fever, influenza, gout, exposure, gastric catarrh, constipation, and gonorrhoea.

Bacteriology.

M. deformans was found in the urine in 31.59 per cent. of the cases, but it must be said that if it were not noted at the first examination, no particular pains were taken to isolate this organism; deformans vaccine was always used. Streptococci appeared in the urine in 36 cases; coliform organisms in 16, but only in four of these in sufficient numbers to justify the description of coli bacilluria. The later cases (among women) have all been catheter specimens, and only 2 cases of coli infection have been met with, though *M. deformans* and streptococci appear frequently.

The presence of a mixed infection has had a very definite bearing on the result of the treatment, and this is the point where the present series differs most markedly from all other cases hitherto published. It will be remembered that the view was expressed by a number of writers that success in the vaccine treatment of rheumatoid arthritis depended on finding a focus of infection and extracting the organisms for the vaccine from that. If no such focus were to be found the treatment had been useless and stock vaccines had failed. The figures given below show that the success of the treatment was less, if anything, among those patients who provided a mixed infection. From the sixty-two cases with fairly complete notes we find:

Infection.	Classes I and II.	Classes III, IV, and V.
Mixed 29	18	11
M. deformans only 33	26	7

Sensitiveness developed amongst the completed cases fifteen times. Unless extreme, it apparently did not influence the result, but only the method.

Dose of Vaccine.

The dose of deformans vaccine is too variable for any useful data to be given. As low a dose as 10,000 germs of ordinary vaccine, or of 10 million sensitized, has aroused a focal reaction. On the other hand, quite sensitive cases have taken up to 500 million toward the end of treatment.

The initial dose in the enormous majority of cases was half a million. The daily weight has been found to be a satisfactory method of controlling the dosage. The interval with small doses has been three to four days; with larger doses a week. Patients do not seem to have been quite so sensitive to the secondary organisms when present, but still great caution had to be exercised; streptococci were given in doses of half a million to 5 million and *B. coli* the same.

Length of Treatment.

It has been difficult to obtain reliable information as to the total length of the treatment in a good many of the cases, where the treatment had been either continued or carried out in full by the patient's own doctor, but taking those known and averaging out the rest, a method which could to some extent be checked by noting the dates of the cessation of correspondence, it works out at five months. Excluded from this are two or three whose treatment extended intermittently over two years or more, and also some where interruptions occurred.

Discussion.

I do not bring forward these cases as proof that the *M. deformans* is the primary cause of rheumatoid arthritis, but as evidence tending in that direction. I do, however, claim that, used as a working hypothesis, better results have been obtained than by any other method of treatment. Among the sixty-two cases of whom the notes are fairly complete, only 21 per cent. failed to respond in some degree. Other 95 per cent. improved but slightly or relapsed early; 70 per cent. may be said to have been cured for the time being as far as cure was possible, and of these it is known that 15, or 25 per cent. of the total, still maintain their position. From recent experience it is suggested that those who have relapsed would have regained their health under further vaccines, and only the war, in the majority of the cases, prevented this.

There is no other method of treatment which can show anything like these results in rheumatoid arthritis. Hitherto the results of vaccine treatment have been unsatisfactory, and in fact the method seems largely to have fallen out of fashion. Professor Stockman does not even mention the possibility in his book on arthritis published this year. S. Boorstein, of the Montefiore Home in America, whose experience must be considerable, made the following statement as recently as last March[21]:

VACCINE TREATMENT: A great deal has been written on, and many patients abused by, vaccine treatment. As shown before, it is very hard to state definitely the bacteria which are the true etiological factors in a given case. Even if the source of entry is exactly found, it is doubtful whether the organism in the joint is the same as in the focus, as the organism changes under different environments. It is, therefore, absolutely worthless to give vaccines, perhaps even harmful. Some have injected non-specific protein antigen with the idea that the proteins of the bacteria are responsible for the cures. *Those cases which I have observed following all forms and kinds of vaccine injection have turned out badly, and I have therefore abstained from using them.*

One very substantial benefit conferred by the treatment has been that after a course of vaccines, when the active signs of the disease have subsided, joints can be manipulated under an anaesthetic without fear of lighting up further trouble. In three of the recent cases operations have been performed. Tendons have been cut, joints cleaned up and freed, and in several others adhesions have been broken down under gas, so that limbs have been brought into use again after long periods of inactivity.

In conclusion, the author desires to make his best acknowledgements to all those of his medical *confrères*, too numerous to mention individually, who have so kindly assisted him with notes of their cases, and many of whom have taken great pains in the matter of tracing their patients.

Harrogate.

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A DIPHTHERIA CARRIER OF UNUSUAL TYPE.

BY

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A CASE of pharyngeal diphtheria occurred on July 26th, 1920, in one of the sons of a family consisting of father, mother, daughter, and three sons. The patient was removed to the Isolation Hospital the same day, and the premises and eating utensils disinfected. Another son developed the disease on July 28th, 1920, and was removed to the Isolation Hospital, and disinfection was again carried out. On August 10th, at 5 p.m., an interval of twelve clear days having elapsed since the last case, the sister complained of sore throat and malaise; no membrane or nasal discharge could be seen, but there was some increased redness of the pharynx and tenderness of the cervical glands. A swab was taken from the throat. On visiting her the next day a patch of membrane the size of a florin was seen on each tonsil, and there was marked narrowing of the space between the tonsils; the swab was reported to show *B. diphtheriae*.

The remaining brother, who slept in the same room, also had a small patch of membrane on one tonsil. After removal of these two cases and disinfecting, swabs were taken from the father and mother. That from the latter was reported to show *B. diphtheriae*, but no clinical signs of diphtheria were present. On admission to hospital she was found to have pediculi capitis, and a small area of impetigo on the scalp; a swab from this was returned showing *B. diphtheriae*; she had therefore *B. diphtheriae* present both in the throat and in the scalp lesion.

It was then found that another son had died from diphtheria in September, 1914. The mother may have been the cause of this case, or she may have become a carrier after contact with it. She herself had never had any marked illness which might have been diphtheria. It appears probable that she was at least the infecting agent in the last two cases, the interval of twelve days being overlong for infection from the first two. As no other source of infection could be traced for the first two cases, it is possible that she was the infecting agent here also.

In view of the possibility that the bacillus found on the head of the mother, though morphologically indistinguishable from *B. diphtheriae*, might be merely a diphtheroid bacillus, this bacillus was isolated, and its pathogenicity proved by animal inoculation. The strain proved to be of medium virulence; 2 c.cm. of a forty-eight hour broth culture killed a guinea-pig weighing 600 grams in less than three days; the *post-mortem* examination showed haemorrhagic oedema at the site of inoculation, and marked congestion of the suprarenal glands.

The impetigo of the scalp had been "present for several months." The series of cases indicate very strongly the necessity of swabbing all contacts in the home irrespective of age, and also of searching for and examining any other lesions.

LIFE-HISTORY OF ASCARIS LUMBRICOIDES.

BY

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MAJOR I.M.S.

THE following is a note of work on the life-history of *Ascaris lumbricoides*, in continuation of that published in the BRITISH MEDICAL JOURNAL, July 1st, October 7th, December 2nd, 1916, January 25th, 1919, and in *Parasitology*, February, 1917, January, 1918, October, 1919.

Four sucking-pigs three days old were fed with ripe eggs of *Ascaris suilla*, Dujardin (the round worm of the pig, probably identical with *A. lumbricoides*, the common round worm of man). All four suffered from ascaris pneumonia on the seventh and eighth days after infection, proving that the larvae of the worm were then passing through the lungs. One died during the night of the seventh-eighth. The remaining three pigs were killed on the fifteenth, seventeenth, and nineteenth days, and larvae of ascaris,

measuring from 3 to 7 mm. in length, were found in the small intestine. They still required to undergo a further moult before becoming adult. The small intestine was in a condition of catarrh, the larvae embedded in abundant muco-pus. In previous experiments I had traced them to the fourteenth day, when they measured 3.8 mm., but had failed to find them on later days. The present positive result replacing the negative result renders it extremely probable that the worm can undergo full development in one host alone—that is, man or the pig.

I hope that a full account of the experiments and of the anatomy of the larvae, together with a summary of recent work on the same subject by Ransom and Foster and Yoshida, will be published shortly in *Parasitology*.

I wish to express my thanks to the governing body of the Lister Institute of Preventive Medicine for their kind permission to work in the institute; to Dr. Martin and Dr. MacConkey for much assistance; and to the Medical Research Council for the grant covering the cost of the animals employed.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

FIBROMA OF THE ILEO-CAECAL VALVE.

A WOMAN, aged 24, was admitted to the Rochdale Infirmary on January 15th as a case of appendicular abscess. She gave a history of three previous attacks of pain in the right iliac fossa during the last six months; they were accompanied by vomiting and constipation, and had each been of only two or three days' duration. The present attack had begun four days before, and had been the worst she had so far experienced. On seeking medical advice she had been immediately sent to the hospital.

On admission she stated that the pain was considerably better and that the attack was passing off. The pulse and temperature were normal, the tongue was slightly furred. The bowels had been moved the previous day. She had vomited last on the morning of admission. There was tenderness but no rigidity in the right iliac fossa. A mass was palpable in the area of the appendix. This mass was tender and fairly movable. The movable mass and the absence of rigidity, fever, and rapid pulse led me to the opinion that this was a case in which the inflamed appendix was wrapped in omentum.

The abdomen was opened through a McBurney's incision; it was at once seen that the appendix was normal, and that the mass was due to a tumour projecting into the caecum from the region of the ileo-caecal valve. It was significant that the terminal portion of the ileum was slightly invaginated into the caecum—that is, there was a very definite sulcus about half an inch in depth at the ileo-caecal junction.

As far as could be gathered from an examination of the outside of the caecum the tumour was smooth, rounded, and incorporated in the bowel wall. In order to determine exactly the origin and limits of the tumour I delivered the caecum entirely—a procedure quite easily carried out through the original incision on account of the caecum being extremely mobile. A clamp was placed upon the terminal portion of the ileum and upon the ascending colon above the caecum, and an incision made through the bowel wall over the growth. It was then seen that the tumour was incorporated in the upper lip of the ileo-caecal valve, and that it projected very considerably into the lumen of the bowel. On its visceral aspect it was smooth, regular, and covered with mucous membrane, except at the most projecting part, where there was an ulcer the size of a sixpence, with a hard, smooth, white floor.

It appeared to me that it would be impossible to excise this tumour thoroughly without removal of the whole caecum and ileo-caecal valve. I therefore removed the terminal three inches of the ileum, the caecum, and part of the ascending colon. It was then necessary to close the original incision, and through a right rectus incision to perform an end-to-side anastomosis of the ileum with the transverse colon. Through this incision I was able to satisfy myself that there were no secondary deposits in either glands or liver. This was as I had expected, because I looked upon this tumour as benign.

The patient made an uninterrupted recovery, though a few days after admission she developed a typical secondary syphilitic rash. The Wassermann reaction was strongly positive, and she received treatment for this condition until her discharge on February 28th.

The tumour was as large as a hen's egg and of similar shape, the more rounded extremity projecting into the lumen of the bowel, the narrower extremity being embedded in the bowel wall in the region of the upper lip of the ileo-caecal valve. It was uniformly hard and fibrous on section and white and glistening in appearance. The pathological report was that the tumour was composed of fibrous tissue and had the structure of a fibroma.

The attacks of pain were, in my opinion, caused by the attempts of the bowel to expel this tumour. The sulcus at the ileo-caecal junction was significant; it showed that at any rate for the last six months before operation the patient had been in imminent danger of intussusception.

Rochdale, Oct. 29th. JOHN C. JEFFERSON.

INTRAUTERINE DIAGNOSIS OF CONGENITAL HEART DISEASE.

SOME time ago, in a medical journal, the question was raised as to the possibility of diagnosing *in utero* a condition of congenital heart disease. The details of a case that occurred in my practice this year may be of interest:

Mrs. H., aged 34, a multipara, was expecting her fourth child; about six weeks before the confinement was due I made my usual routine examination. On auscultation the fetal heart was easily audible, the point of maximum intensity being about 2 in. below and 1¾ in. to the right of the umbilicus. The ordinary fetal heart sounds were largely, though not entirely, replaced by a loud blowing bruit, systolic in time, the rate being 128 per minute. The mother's pulse rate was 60. The uterine souffle was hardly audible on the right side, but easily heard on the left. It will be understood that in saying a loud bruit was heard one is speaking relatively. But the sound was loud enough to be heard over a larger area than is usually the case with a fetal heart, and of sufficient intensity to make the fetal heart sounds more easily detected than I can recall in any of some hundreds of cases previously examined. About a month later—that is, a fortnight before the confinement was due—I again auscultated the case; although the fetal heart was not audible to the right, it could be heard at the corresponding spot to the left of the umbilicus, the child having made, roughly, a quarter-turn in a vertical axis. On this occasion, as regards quality and intensity, the sounds were similar to what I had heard four weeks previously, but the rate was now 132 per minute and the mother's pulse 66. The degree of pressure of the stethoscope on the abdominal wall made little or no difference to the sounds. On my calling the attention of the nurse to what I had heard, she informed me that one child had died, when about 6 months of age, quite suddenly and unexpectedly. A fortnight later the child was born and the heart was normal in every respect, with no evidence whatever of any congenital imperfection.

The points of interest appear to be the presence of this marked systolic murmur, and its definite, persistent, and unvarying nature over several weeks, even when the fetus had altered considerably in position. The bruit is difficult of explanation. If due to circulation through the foramen ovale, or ductus arteriosus, why should the presence of such a bruit be so rare an occurrence? If the sounds are not of cardiac origin the presence of a funic souffle is a possible explanation. This is stated to be due to cord compression by the stethoscope, or by some position of the cord in relation to the child, which leads to stretching. But in this instance a varying stethoscope pressure made no difference to the sounds, nor had they perceptibly altered when the child had rotated very considerably in the vertical axis. If any inference can be drawn from a single case, it is that auscultation cannot be relied upon in all instances as a means of diagnosing congenital heart disease *in utero*.

Barnet. B. H. STEWART, M.D., B.Ch.(Cantab.).

THE CHOLECYSTITIC HEART.

THE term "cholecystitic heart" is taken from Sir Berkeley Moynihan, who first drew my attention to the irritability of the heart in cases of cholecystitis. The following is an explanation of this condition: Stimulus material is constantly being built up within the heart muscle. When this stimulus material reaches a certain summit it, as it were, explodes and originates a muscular contraction. The time at which the stimulus material explodes depends upon the degree of irritability of the muscle cells.

In the resting state the lining membrane of the cardiac muscle cells is semipermeable—that is, it is permeable to only one electric ion, the positive or negative. The cell is in a state of physiological polarization, or what is known as a Helmholtz double layer.

In the state of excitation the lining cell membrane becomes permeable to both positive and negative ions, the state of polarization of the Helmholtz double layer undergoing depolarization; and between the active and non-active part of the muscle there is a difference of potential which can be recorded by the galvanometer. Excitation

therefore is associated with an increased permeability of the cell membrane.

Any substance which increases the permeability of the cell membrane will increase the irritability of the cell, and give rise to an early explosion of the stimulus material, from which an early muscular contraction will result. A repetition of this process will cause an increased rate of the heart beat. Now bile salts are known to cause an increase in the permeability of the lining cell membrane, and therefore to increase the irritability of the cardiac muscle and the rate of the heart beat. In cholecystitis the bile salts circulating in the blood are increased, and this is the cause of the irritable character of the cholecystitic heart.

The reverse also holds good—that is, that a diminution in the bile salts circulating in the blood causes a decrease in the permeability of the lining cell membrane and a diminished irritability. In jaundice the bile salts circulating in the blood are diminished, which accounts for the slow pulse rate associated with jaundice.

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Reports of Societies.

TUBERCULOUS STRICTURE OF INTESTINE.

AT a meeting of the Medico-Chirurgical Society of Edinburgh, held on November 4th, the President, Emeritus Professor F. M. CAIRD, read a paper on tuberculous stricture of the intestine, based on a series of 43 cases, and illustrated by colour-drawings of the operation specimens. After alluding to the acute ulcerative type of lesion, secondary to pulmonary phthisis, which seldom came to the surgeon, he said that all his cases belonged to the formative chronic type, with quiescent or no pulmonary affection. Sometimes there was extraordinary hypertrophy of the tissues—a fibromatosis which might closely simulate malignant disease. Symptomatology and the differential diagnosis from subacute appendicitis and malignant disease were discussed. The age-incidence of the series showed 33 cases almost equally divided between the second, third, and fourth decades; the majority were women. The sites of stricture were as follows: Jejunum, 1; ileum, 14; ileo-caecal valve and colon region, 26; transverse colon, 2; two were abscesses of indeterminate site. As to operative treatment Professor Caird advised resection of the whole affected area, though short-circuiting might be done in some cases of multiple stenosis. He had performed resection in 40 cases, in which the immediate results were 27 recoveries and 13 deaths, and short-circuiting in 3 cases with 1 death. The after-histories showed that 12 cases were now dead (nearly all of some form of tuberculosis), 4 could not be traced, and 13 were still alive at varying periods from the operation.

Sir HAROLD STILES said that the condition was unusually common in Scotland as the result of feeding with contaminated milk. Though the common site of ulcer and stricture was the ileo-caecal region, it was more common elsewhere than imagined, and also was not rarely multiple. Such ulcers occasionally perforated. He entirely agreed that the operation of election was resection of the affected area. Mr. SCOT SKIRVING gave his operative experience in a boy of 14 years with ulcer, stricture, and obstruction high up in the ileum.

Bacteriuria.

Dr. CHALMERS WATSON, speaking on the subject of bacteriuria, said the methods in common use in many laboratories for the determination of bacteriuria were fallacious, with the result that the reports furnished to practitioners were inaccurate and misleading. A true bacteriuria was much commoner than was supposed, although it was a difficult problem to assess the clinical value of the findings. The ordinary method of bacteriological examination was to inoculate some medium with a loopful of sediment from the centrifuged urine (a catheter specimen). A more delicate method, used by Panton, was to incubate an equal volume of urine with some fluid medium for twenty-four hours, and to subculture from this. Panton had in 100 cases, drawn from all sorts of conditions, found only 18 per cent. sterile; in 50 cases investigated in another laboratory by the ordinary method, 48 per cent. were sterile. In a series of 7 cases investigated by both methods, the speaker had found bacteriuria in all by Panton's methods, but five were sterile by the ordinary method. Further investigation along these lines might possibly throw light upon that large group of chronic medical disorders associated with intestinal stasis and toxaemia.

Sir DAVID WALLACE referred to the great difficulty in obtaining a sterile specimen of urine, even from the bladder, and suggested that in many of these cases the bacteriuria was not genuine, but derived from the urethra. Dr. F. PORTER said that an adequate and simple method of testing for bacteriuria was to evaporate a drop of urine, and at once stain and examine. In this way he had examined about 500 cases and found results similar to those of Dr. Chalmers Watson. He cited illustrative cases, and said that there was some connexion between acute seborrhoeic eczema and bacteriuria. Mr. D. P. D. WILKIE made a plea for a large number of control examinations in healthy cases.

Blood Transfusion.

Mr. J. M. GRAHAM read a paper, based upon seventy-five cases, on transfusion of blood. He detailed the methods for the recognition of suitable donors, and also the apparatus and technique of the various methods of transfusion. Good results were obtained in cases of primary and secondary haemorrhage; where these were complicated by sepsis or shock the results were not so good, and in pure shock they were disappointing. In pernicious anaemia he obtained a temporary benefit in most cases; in some real and lasting improvement followed transfusion as an adjuvant to arsenic, given simultaneously. As a whole, in pernicious anaemia, no permanent therapeutic benefit could be claimed. Both in haemophilia and in purpura haemorrhagica he had had definitely successful results, probably due to prolongation of the coagulation time of the blood. In all the cases cited the results had been checked by exact enumeration of the red blood corpuscles and estimation of haemoglobin. Professor MEAKINS said that the main indications for blood transfusion were found in conditions where there was great reduction both in haemoglobin and in blood volume—that is, cases of sudden severe haemorrhage, and also of chronic bleeding. In shock, however, where both blood volume and haemoglobin were probably increased, the treatment called for was not blood transfusion, but intravenous injection of saline or gum solution.

LETHARGIC ENCEPHALITIS IN CHILDREN.

AT a meeting of the Royal Medico-Chirurgical Society of Glasgow, held in the Faculty Hall on November 5th, Dr. LEONARD FINDLAY made a communication on epidemic encephalitis (encephalitis lethargica) in childhood, based on an analysis of 23 cases observed during the present year. Most of the cases sickened during the month of May, and 20 were boys. The salient features were sudden onset (with or without fever), choreiform movements, and some form of paralysis, most frequently of a cranial nerve and especially of the intrinsic or extrinsic muscles of the eyeballs. In some of the early cases marked congestion of the optic discs was observed. The chorea passing off, the child usually sank into a state of lethargy, which was more or less pronounced, and lasted for varying periods. On recovering from the lethargy, a peculiar night restlessness appeared; this had been a typical and striking feature of the cases. The children were unable to sleep at night, but spent the time shaking the pillows, arranging the bedclothes, performing duties of the toilet, muttering and singing to themselves. They might even get up out of bed, dress themselves, and go out into the street to play; they also developed dirty habits. During the day, at this period, nothing abnormal, save the remnant of paralysis, might be noted, or a certain degree of drowsiness might be present. Suggestion was tried without effect, although from the tendency of the nocturnal restlessness to disappear on change of surroundings, this condition seemed to be of psychic origin.

Dr. CECILIA SHISKIN recorded the results of the examination of the cerebro-spinal fluid in the cases dealt with by Dr. Findlay. Like other workers, she had found

no marked change in pressure, colour, sugar content, cytology or bacteriology. Lange's colloidal gold test was performed in twenty cases, and a luetic type of reaction was obtained in sixteen cases. In some the reaction was as marked as in the case of general paralysis of the insane, but the Wassermann reaction was always negative. It was found that the positive Lange reaction was only obtained when excess of globulin was present. It was suggested that the reaction depended on a combination of globulin and toxin, and that the etiological factor was of the nature of a spirochaete. This thesis was supported by finding a normal cerebro-spinal fluid act like one from a case of meningitis on being secondarily infected, but in experiments where normal cerebro-spinal fluid was inoculated with spirochaetes it was not found possible to induce the luetic type of reaction. In the discussion that followed, Dr. A. K. CHALMERS, the Medical Officer of Health for Glasgow, suggested a possible relationship between influenza and the condition described by Dr. Findlay. Dr. WILLIAM M. ELLIOTT showed a series of microscopic sections illustrative of brain lesions in epidemic encephalitis.

TREATMENT OF ANTHRAX.

AT a meeting of the Liverpool Medical Institution, held on November 11th, with Dr. J. E. GEMMELL, President, in the chair, Mr. G. C. E. SIMPSON read a note on anthrax. After noting the symptoms and treatment, he described twelve consecutive cases cured, six of them manifesting severe constitutional symptoms in addition to the pustule. In each case from 20 c.cm. to 500 c.cm. of anthrax serum were injected in cumulative doses. Excision with carbolization was performed in three cases. In some the sore was dressed with glycerin of biniodide of mercury. In one there was apparently dry gangrene of a finger with extensive streptococcal infection of hand and arm, and, pending bacteriological investigation, amputation of finger and incisions of hand and forearm were performed. Generally the temperature fell within a period varying from a few hours to six days. Occasionally a slight rise followed the injection; in some cases the fall was by crisis with collapse and a very slow pulse, One patient's condition was acute for several days, and 440 c.cm. of serum was given subcutaneously in 120 hours before improvement supervened, the subsequent slough, measuring 3 in. by 2 in., involving malar region and both eyelids. In one case, that of a farmer, multiple pustules appeared in the arm together with oedema of the chest, after cutting up the carcass of an infected beast. On the third day of treatment the patient appeared moribund, with vomiting, severe diarrhoea, and melaena; but 380 c.cm. were injected in ninety-six hours. He was discharged with wounds healed on the twenty-fifth day. In these two cases the first dose of serum was given intravenously; the farmer, when apparently moribund, rallied after 90 c.cm. of serum intravenously on the eleventh day, temperature and pulse falling to normal after a further 310 c.cm. subcutaneously. The oedema of arm and chest resolved on the sixteenth day. He was treated by eusol baths for the streptococcal infection, the subcutaneous gangrene having spread to the middle of the upper arm. Mr. Simpson was convinced that the present 15 per cent. mortality could be abolished by the use of anti-anthrax serum. The intravenous route is of value for urgent cases. Excision is rarely called for in unmixed anthrax: it merely delays cure and adds to the risk of transmission of infection.

Dr. BURTON ROBINSON read a paper on "The sun cure" in the High Alps, dealing with pulmonary and surgical tuberculosis as treated at Leysin, and illustrated by lantern slides. The "Rollier clinics" for surgical tuberculosis showed, he said, remarkably interesting and good results. The pictures of cases before and after treatment bore witness to complete reconstitution of the general health, and at the same time consistently good recovery of function in spondylitis and other articular tuberculosis, as also in adenitis and peritonitis. The importance of methodical insolation and full pigmentation was emphasized. The speaker advocated schools in the sun for delicate children, as conducted in alpine heights, so far as this was possible under the difficulties of the English climate. Legislation in regard to cows and milk and the housing question was needed. Reference was made to attempts in England to cure surgical disease by open-air treatment in hospitals, such as the Treloar Cripples' Home for Children at Alton and the Leasowe Hospital in Cheshire.

TREATMENT OF PROLAPSUS UTERI.

A MEETING of the North of England Obstetrical and Gynaecological Society was held at Liverpool on October 15th, with the senior vice-president, Dr. J. E. GEMMELL, in the chair. Dr. F. HAMILTON LACEY read a paper on the "After-results of colporrhaphy performed in 470 cases of genital prolapse," the number traced out of 690 operations performed at St. Mary's Hospitals, Manchester, during the years 1914 to 1916.

The cases grouped themselves into four classes—cystocele, rectocele, prolapsus uteri, and inversion of the vagina around the elongated cervix. Operations for the repair of the perineum only were excluded. The operations performed were anterior colporrhaphy, posterior colporrhaphy combined with perineorrhaphy, and, in some cases, amputation of the cervix in addition. Of the 470 patients who replied to the questions, 391, or 83 per cent., stated that they were cured of their prolapse. Of the remaining 79 cases 29 came for examination and 17 of these had some prolapse, slight in most cases. Of the remaining 17 per cent. a considerable number had no prolapse but were suffering from such conditions as cystitis, prolapsed kidney, adherent appendages, haemorrhoids, and senile vaginitis. In only one instance was a case of procidentia encountered, a woman aged 76 suffering from chronic bronchitis. In one case the patient had gone back to work in the mill w thin two months of operation. In two others the trouble was caused by the hypertrophied and elongated cervix, and probably would not have occurred had this been amputated at the operation. In the series taken as a whole the results were much the same, whether the cervix was amputated or not; this might only mean that the cervix was always removed when likely to cause trouble. As regards subsequent pregnancies, the results showed that the colporrhaphies stood the strain very well, but, as was to be expected, the failures had a higher percentage of subsequent pregnancies than the successes.

In sum, the figures proved that prolapse could be successfully treated by the operation of colporrhaphy.

Dr. BRIGGS (Liverpool) had been disappointed with his results from colporrhaphy, and did not like leaving the uterus in a retroverted position. He doubted if cases of prolapse could be cured by creating a mass of scar tissue in place of the normal support of the pelvic floor. Dr. DONALD (Manchester) had been convinced for many years of the success of these operations, and believed that colpoperineorrhaphy, properly carried out, was the best operation for prolapse, and that no other method was necessary. He had had cases with four or five subsequent labours where the result had remained good. The tissues, of course, were much stretched during labour, and in some cases the prolapse recurred, but he generally found that these patients came back to have the operation repeated, thus showing that they had felt benefit from it. He considered it quite unjustifiable to remove the uterus in the treatment of prolapse. There were many variations in the method of carrying out the operation, in some an attempt being made to keep the uterus in a forward position. He personally did not think the position in which the uterus was left mattered at all, narrowing of the vagina was the important point. Dr. STOOKES (Liverpool) had performed colporrhaphy for the last six years and was well satisfied with his results. He disagreed entirely with the statement that complete prolapse could not be cured by perineal operations. Dr. GEMMELL (Liverpool) thought that a fixation operation was sometimes required; he had met with cases where a ventrifixation, combined with colporrhaphy, had given better results than the latter operation alone.

AT a meeting of the Nottingham Medico-Chirurgical Society, held on November 10th, at the society's rooms, 64, St. James Street, Dr. Blurton (the president) gave his presidential address on "The report of the Consultative Council and our attitude towards it." The lecturer gave an interesting summary of the report and commented briefly on its suggestions. He advised an attitude of sympathy towards its aims, and this attitude was warmly supported by the members present.

AT the meeting of the Council of the Pharmaceutical Society on November 17th it was decided to suggest to the Government the appointment of a committee to inquire as to what changes, if any, are necessary in the law relating to the prescribing and dispensing of medicines and the supply and use of poisonous weed killers.

Reviews.

OSLER AND McCRAE'S "MEDICINE."

The appearance of the ninth edition of his world-wide textbook, *The Principles and Practice of Medicine*,[1] inevitably strikes a note of sadness, as we are reminded that the late Sir William Osler was engaged on its revision when his fatal illness began, and, according to his devoted pupil and collaborator Dr. Thomas McCrae, had practically completed the numerous changes necessary since the eighth edition saw the light in 1912. He had, indeed, perhaps from some unconscious premonition, decided long ago to give up active participation in this classic when he reached the allotted span of 70 years.

During the twenty-eight years since the first edition appeared in 1892 this textbook has been remarkable not only for clear condensation of the latest advances and a wonderful sense of proportion, but for personal touches, often with a subtle humour, which make an attractive story of what might otherwise have been a string of details dully strung together. No one is better fitted to preserve these characteristics and carry on this tradition than Dr. McCrae, who has, so to speak, grown up with the textbook and whose name appeared on the title-page of the eighth edition; his preface admirably voices medical opinion about his chief in the words: "It is doubtful if any man of his generation exercised a greater influence. From all who knew him has come the tribute to the man even more than to his learning." A recent photograph of Sir William Osler has appropriately been placed opposite the title-page.

Much thought and care have obviously been given to this revision, for in spite of the insertion of the thirteen new articles mentioned in the preface, some of which, such as paratyphoid fever, trench fever, and gas poisoning, became prominent during the war, and of many additions elsewhere, especially to the sections on the circulatory and nervous systems, the volume is considerably smaller than on the last occasion. Writers of books must all admit that while it is easy to add new matter, excision of the existing text is a painful and difficult procedure; the usual course of a textbook is to increase in weight with years and to die of unwieldiness; it is therefore a good omen for its future that the new "Osler and McCrae" contains fifty-seven pages less than the eighth edition. The absence of matter hardly necessary for the student and practitioner of medicine, such as the introductory or general articles, often rather pathological in tone, which were formerly common in textbooks, has always been a feature in this work; and a reviewer of the first edition expressed mild surprise at the unusual event of a textbook beginning with an account of typhoid fever.

The classification and arrangement of diseases must always be a thorn in the flesh to authors who desire to be consistent, and it is probably the best course to sacrifice uniformity to the convenience of the reader, but here again there may be difficulties in the way. The problem of deciding between the etiological and the anatomical bases of classification is well shown in the case of infections that mainly attract attention by well-defined local manifestations. Dr. McCrae disarms criticism by frankly admitting embarrassment, and the following examples from the text illustrate the difficulties: pneumonia and pneumococcic infections, tuberculosis and syphilis of all parts of the body, pyogenic infections, and cerebro-spinal fever are conveniently classed as specific infectious diseases on an etiological basis, but malignant and subacute bacterial endocarditis are considered locally under heart disease, and acute poliomyelitis and epidemic encephalitis under diseases of the nervous system. Dysentery appears in two places among the specific infectious diseases, so that the bacillary and amoebic forms are widely separated—a course not without disadvantages. In any large work such as this it is fairly certain that meticulous search will sooner or later bring to light some misprint, and such an accident is not worthy of notice, but in one instance the printer's devil, by substituting "French fever" for "Trench fever," has produced a synonym which, though novel is not, perhaps, entirely inappropriate.

It would obviously be impossible to notice all the changes or even to discuss the additions pointed out in the preface, but a few references to the up-to-date character of the leading work on the practice of medicine should not be omitted. The account of influenza naturally touches on the features of the recent pandemic; subcutaneous emphysema is explained as due to rupture of a subpleural emphysematous bulla tracking by way of the mediastinum into the tissues of the neck; the severity of the disease in American camps and transports is illustrated; and on the much debated question of the relation of the influenza bacillus to the disease the conclusion reached is that, though conflicting, the evidence does not justify the denial of the causal nature of this organism. There is a new and admirable summary of epidemic encephalitis with full recognition of Dr. McNalty's work. The account of cerebral arterio-sclerosis, which has been entirely rewritten, contains the graphic turn of speech, "Often it is not a question of the petrol tank—the blood supply—but the whole machine is worn out." This recalls the famous sentence, fortunately retained on p. 834: "Entire families sometimes show this tendency to early arterio-sclerosis—a tendency which cannot be explained in any other way than that in the make-up of the machine bad material was used for the tubing," which was thought by the late Sir William Osler to provide the answer to the question set in "An examination paper on Osler, edition iv" (vide *St. Thomas's Hospital Gazette*, March, 1902), "What internal evidence is there that Osler has had an unhappy experience with cheap bicycles?" The section on the circulatory system has been considerably altered in response to recent work, especially that of Dr. T. Lewis, and contains some well-reproduced electrocardiograms. As an example of a telling phrase the following sentence in connexion with the causation of high blood pressure may be quoted: "Some have attributed it to over-activity of the adrenals, but it is more likely that the primary difficulty is somewhere in the capillary bed—in that short space in which the real business of life is transacted." In speaking of arterio-sclerosis of the pulmonary artery, the symptom-group of cyanosis, dyspnoea, polycythaemia, repeated haemoptysis, angina, cardiac enlargement, and chronic passive engorgement, entitled "Ayerza's disease," finds a place. Much new material has been added to the section on nervous diseases; for example, progressive lenticular degeneration (Wilson's disease) is portrayed in a thumb-nail sketch, and the article on Huntington's chorea has been enlarged by the inclusion of Davenport's interesting study of nearly 1,000 cases traced back to some half-dozen individuals who migrated to America in the seventeenth century.

[1] *The Principles and Practice of Medicine.* Designed for the use of Practitioners and Students of Medicine. By the late Sir William Osler, Bt., M.D., F.R.S., and Thomas McCrae, M.D., F.R.C.P. Ninth, thoroughly revised edition. New York and London: D. Appleton and Co. 1920. (Med. 8vo, pp. 1192; 21 figures. 30s. net.)

HUMAN PARASITOLOGY.

It would probably be admitted by anyone who has practised in hot countries that a good knowledge of medical zoology is well-nigh essential; it would also be admitted that the liaison between medicine and zoology is at present weak, and that textbooks containing sound zoology, but within the grasp of the medical man, are a desideratum. Dr. D. Rivas, of the University of Pennsylvania, has attempted this in his book, *Human Parasitology*,[2] and we are confident that he realizes more than most of us the difficulty of the task he undertook. It is a task which demands knowledge both of medicine and of a number of specialized branches of zoology, and in our opinion the production of a successful textbook of the parasitology of man will be best accomplished by four or five specialists, and not by any one man. It is indeed difficult to keep in touch with all that is now written on this subject, and it is impossible for one man to read all the entomology and protozoology, and helminthology and mycology, with that expert critical acumen which is required; if one man attempts to summarize all our knowledge relating to man's parasites he may possibly avoid actual error, but he will certainly fail to emphasize the essentials, or to exercise right judgement when authorities are in conflict.

[2] *Human Parasitology.* With notes on Bacteriology, Mycology, Laboratory Diagnosis, Haematology, and Serology. By D. Rivas, M.S., M.D., Ph.D. Philadelphia and London: W. B. Saunders Co. 1920. (Roy. 8vo, pp. 715; 422 figures, 16 plates. 35s. net.)

We have examined Dr. Rivas's book in a charitable spirit, and have found much to criticize. Zoological nomenclature is troublesome to every tropical practitioner, but it is well known that there is an international code, the "law of priority," and that it is believed that the application of this code will produce uniformity, perhaps at no distant date. Dr. Rivas, while professing allegiance to this code, breaks it constantly but not consistently. He speaks sometimes of *Esophagostomum*, at other times of *Oesophagostomum*, and a certain proportion of his readers may fail to realize that there is only the one worm. He is consistent, but consistently wrong, with *Ameba*, *Endameba*, and *Tenia* when he uses these names as definite generic names. Of course, if one wishes to speak of "ameba" or "amebas," not as strict generic terms but as Americanisms by adoption, the spelling and the formation of the plural are optional. Similar mistakes in generic and specific names are not merely common but actually abundant throughout the book; they are not only violations of the international code, but confusing to the people for whom the book was written.

In the section which deals with protozoa many errors are encountered. Three species of "*Endameba*" are given—*coli*, *histolytica* and *tetragena*; the appearance and life-history of each is related at length, and it is stated that the third is a commoner cause of dysentery than the second, but that "it is probable that these two parasites may be identical." The identity of *E. histolytica* and *E. tetragena* was established nearly a decade ago. The life-histories as given are, each one of them, disbelieved in by the majority of modern protozoologists; we had supposed the budding of *E. histolytica* to be absolutely discredited. We have come across no reference to the mass of important literature relative to Amoebiasis, which has grown up during the war, hardly a paper in the bibliography later than 1912, and no mention of Wenyon or Thomson or Dobell. The life-cycle of "*Haemoproteus noctuae*" is figured: a number of well established life-cycles of haemosporidia are known, from which to draw examples, but that of "*H. noctuae*" is certainly open to criticism, and quite probably compounded from two or three separate genera of blood parasites infesting the little owl.

We cannot discuss the rest of the book in detail, but we must remark on the fact that there is no mention of *Phlebotomus* (though a number of non-biting flies are included), on the absence of any reference to trench fever as carried by lice, and on the statement that sulphur fumigation is of value against bugs. The author tells us that he cannot keep captive *Musca* alive for more than forty-eight hours, but he should have given the experience of the dozen or so investigators who have written during the last fifteen years, and have kept this insect alive for three or four weeks.

Apart from corruptions of scientific names, pure misprints are numerous. The borrowed figures are good, though some are archaic; the original figures are most disappointing and no magnification is given in the majority of cases.

SUGAR.

ONE of the facts which every schoolboy ought to know, but which most adults have forgotten, is that the sugar beet began to become a serious rival of the sugar cane a little over a century ago, when, in 1811, France being cut off from her colonial cane sugar supply by the British blockade, Napoleon ordered 70,000 acres in France to be planted with sugar beet. At that time the percentage of sugar in the beet was only 7, or half of that in the sugar cane, and the extracted beet juice contained so much saline impurity that it was difficult to cause the sugar to crystallize. By methods of cultivation the amount of saline constituents was diminished, and by breeding new varieties of beet the proportion of sugar was increased as much as 20 per cent. Probably the highest yield of sugar from the cane is obtained in the Hawaiian Islands, and from the beet, before the war, in Germany. Under the very best conditions in the islands the yield of sugar might be as high as six tons an acre, but this is very exceptional; in Java the yield was not much more than half. The best yield from beet (Germany) was 1.7 to 2 tons an acre.

These facts we extract from a book on *The Manufacture of Sugar from the Cane and Beet*,[3] which Mr. T. H. P. HERIOT, lecturer on sugar technology at the Royal Technical College, Glasgow, has contributed to the Monographs on Industrial Chemistry, edited by Sir Edward Thorpe. The book, though intended rather for the general reader than the specialist, gives a fairly full account of the various elaborate processes followed in the extraction of sugar from the cane and the beet, and the purification of the crude product. An immense amount of ingenuity has been expended on the design of machinery, but except in Germany and France, scientific inquiry has not been encouraged, and the growers and refiners have been too much disposed to rely on rule-of-thumb so-called practical methods.

At present the by-products of the cane sugar factory have not attained much importance; the most bulky is the bagasse, which consists of the fibre of the cane, with a small amount of sugar. It is a cheap and convenient fuel for the pans and boilers of the factory, and probably for this reason little other use has been made of it, although as long ago as 1838 it was shown that it could be used to make paper. Good wrapping paper has been made both in Trinidad and Cuba, and recently a patent was taken out for making newspaper pulp. Another by-product, "final molasses," which is useless for the manufacture of sugar, has been used for the production of alcohol. It is possible that important developments in this direction may take place in the case of the beet as well as of the cane.

Another by-product in Germany is yeast. During the war fixation of atmospheric nitrogen was adopted in Germany on a large scale as a source of nitrates for explosives; considerable quantities of ammonium salts also were produced, which were used to feed yeast, which, when used as food for cattle and horses, and even men, helped to make good the scarcity of nitrogenous fodder. For use as human food the pressed yeast is mixed with starchy material and baked, or is digested with a concentrated sugar solution which is then reduced to a thick syrup resembling in appearance malt extract and containing 2 per cent. of proteins.

The last part of the book is concerned with refining of cane and beet sugars, primarily for the production of white sugar in lump or crystals, but yielding also treacle and golden syrup; the former is, in fact, a by-product, but golden syrup is specially manufactured. It is made from cane syrup of high purity, and crystallization is prevented by inverting part of the sucrose. The inversion is produced by the addition of dilute sulphuric acid to diluted syrup in lead lined vessels fitted with mechanical stirrers and steam coils.

At the present time, when much practical interest is being shown in the cultivation of the sugar beet in this country and the manufacture of sugar from it, the book ought to find many readers. They should take to heart Mr. Heriot's concluding observation to the effect that the remarkable technical progress made within the past century in the production and refining of sugar has not been effected by the so-called practical man or sugar producer, but by a comparatively small number of men of science who built the theoretical foundations upon which the modern practice rests. In this way the new plant, sugar beet, was evolved, and a new method of extracting sugar discovered and perfected, so that within eighty-four years Germany was able to produce over a million tons of beet-sugar a year.

INCOME TAX GUIDES.

THE recent drastic changes in the method of graduating the income tax, and at the same time the extension of the allowances for wife and dependants to all taxpayers irrespective of their total incomes, has produced a large number of publications written for the guidance and assistance of taxpayers, and incidentally for the pecuniary benefit of their authors. We doubt whether it will ever be possible to deal at all adequately with so complicated a subject as the income tax in a small handbook, useful as such a production may be in its own sphere. As fairly typical of this kind of handbook, we may mention one which has

[3] *The Manufacture of Sugar from the Cane and Beet.* By T. H. P. Heriot, F.I.C. With illustrations. 1920. London: Longmans, Green and Co. (Crown 8vo, pp. x + 426. 24s. net.)

reached us, *The Income Tax for 1920–21 : Rates, Relief, Repayment.*[4] As an explanatory pamphlet dealing with the allowances to which a taxpayer is now entitled it is deserving of praise; the phraseology is clear and the printing excellent, but, after all, the official memorandum which is issued with the forms of return and notices of assessment is reasonably intelligible, and is apparently free from the few minor inaccuracies which we have found in the handbook in question. What a taxpayer really wants is assistance in preparing his computation of gross liability rather than a guide to tell him what allowances should be made in assessing him on that amount of income, and in this the average handbook necessarily fails. Business and professional activities are too manifold in character to-day to be dealt with as a whole and within the very narrow limits implied by a small handbook dealing with allowances, relief for Colonial taxes, and claims for repayment. In the handbook referred to, for instance, there is little to assist a professional man in the task of calculating his income for tax purposes, though it explains that alum works are assessable on the profits of the previous year, and that repayment can now be claimed on the 6 per cent. dividends payable on the income debentures of the Underground Electric Railways of London, Limited.

Another little handbook on somewhat similar lines is the *Financial Times Income Tax Guide, 1920.*[5] Within the unavoidable limits of space a great deal of clear and useful assistance is given in the understanding of the new procedure. The author includes a summary of the former income tax regulations, but would have been well advised to drop the use of the word "current" in doing so; its use is misleading, and—as, for example, in the paragraph on farmers' tax—involves a rather serious misstatement with regard to super-tax. The *Guide* states that "the question of special reliefs in respect of service men is not apparently altered by the present Act." We doubt the accuracy of that statement, as the special reliefs required specific re-enactment to maintain their existence, so that the silence of the Finance Act 1920 on the point seems to imply their cessation. Apart from these and one or two minor blemishes, the author has done his work well and given good value for the modest price demanded for the *Guide.*

We much prefer the method of dealing with the problem adopted by the writer of a pamphlet entitled *Doctors' Income Tax.*[6] By dealing separately with a distinct species of income—in this case professional profits, and especially those of medical practitioners—it is possible to convey really useful assistance in the preparation of a return of income. The pamphlet is succinct, and the examples given are chosen to bring out the explanations clearly. It is accompanied by a draft calculation sheet ruled to serve for the computation of three years' profits, with cross-references to the notes in the explanatory pamphlet. On one point we find ourselves at variance with the writer. He says: "When from any cause a motor has to be replaced, the cost of the old one, less any sum realized for it, is to be charged as a working expense. The cost of the new one is excluded." In our view, if the new car is similar—or at least no better—in power, capacity, and general grade to the car replaced, the amount allowable is the difference between the cost of the new car and the amount received for the old one. That view appears to have been endorsed by the recent Royal Commission, and in these days of high-priced cars the point is of some importance.

NOTES ON BOOKS.

As a handbook and guide for tuberculosis nurses, health visitors, and others who have to do with this disease, Dr. MEACHEN's little book, *Tuberculosis*,[7] will be found to fulfil a useful purpose. The writer fully recognizes the fact that under present conditions it is only possible to deal effectively with the individual patient. The disease itself progresses as freely as ever in the community. Hence the greater part of the book is devoted to the description of the various means that have been found useful in dealing with the established disease as it presents itself in daily practice. Most of it will probably be already well known to trained nurses and visitors, but it contains many valuable hints that are apt to be forgotten in dealing with the many domestic difficulties that must arise from time to time. The advice given is on the whole most judicious and very clearly expressed; it may be cordially commended to the notice of those for whose assistance it has been written.

A second edition of Dr. J. B. MENNELL'S useful volume on *Massage: Its Principles and Practice*,[8] has been published, completely revised by the author. Notwithstanding the legion of books on massage published during the last decade, Dr. Mennell's work still fills a niche of its own, as it emphasizes principles more than details of treatment—not that it neglects detail either in the text or in the many admirable illustrations. The author thus addresses himself more to the medical man than to the masseur, for the day is past when "try a little massage" (after trying everything else) was enough direction on the part of the physician or surgeon.

The twenty-ninth edition of *The Annual Charities Register and Digest*[9] has now appeared. This most useful work of reference is issued by the Charity Organization Society. The information is classified on a convenient plan, and there is a full and careful index.

[4] F. C. Mathieson and Sons, 16, Copthall Avenue, E.C. 2. Price 2s.
[5] Published by the Financial Times, Ltd., 72, Coleman Street, E.C.2. Price 1s.
[6] Philip Sulley, 27, Rutland Square, Edinburgh.
[7] *Tuberculosis.* By G. Norman Meachen, M.D., B.S.Lond., M.R.C.P. Lond. and Edin., Tuberculosis Officer, County Borough of Southend-on-Sea, etc. Pocket Guide Series. London: The Scientific Press, Ltd. 1920. (Pp. 124. 1s. 3d. net.)
[8] *Massage: Its Principles and Practice.* By James B. Mennell, M.A., M.D., B.C.Cantab. With an introduction by Sir Robert Jones, F.R.C.S. London: J. and A. Churchill. 1920. (Demy 8vo, pp. xvi + 536; illustrated. 21s. net.)
[9] *The Annual Charities Register and Digest.* Being a Classified Register of Charities in or available for the Metropolis. Twenty-ninth edition. London: Charity Organization Society. 1920. Pp. 611. 5s. net.

THE INTERNATIONAL PROBLEM OF MEDICAL EDUCATION.

BY

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THE discussion which took place at the meeting of the Education Section of the British Medical Association on July 1st at Cambridge was important, and specially so to a stranger like the writer of the present article, since the debate ran on lines so familiar to him that, apart from a few details, he might have believed himself listening to a debate taking place in his own country. Never was the substantial identity of the problems of medical education so evident; and even if the well known and charming English courtesy and the friendly welcome of his colleagues in the university had not in themselves brought home to him the strong ties uniting the members of all universities, the discussion on Medical Education alone would have convinced him that in respect of the substance of the didactic and educational problems of medical university education no difference exists between countries on the same level of civilization and culture.

As a veteran in my profession, I was convinced years ago of the necessity of a reform of medical studies which are still being woven on the old loom that may have been good for the fabric of half a century ago. However great the elasticity of the organization of university studies to permit an adaptation to the gradual changes in science and its application, yet in all that concerns the whole body of sciences which constitute medicine such an adjustment was bound to prove unsatisfactory. The main reason is that the changes and improvements which can be introduced into the university curriculum presuppose corresponding changes in the preparatory studies in secondary schools. These schools remain unaffected by the movements which determine the continuous changes taking place in the universities, and tend, therefore, to remain rigid or to reform themselves only in conformity with such general humanistic culture as is considered sufficient to bear the superstructure of university teaching. When the student reaches a certain age, say 23 or 25, the practical application of studies and the strain of economic factors—hitherto absent—press for the shortening of the preparatory stages and for placing him into a position to derive immediate profit from intellectual labours carried on for many years. Moreover, the character of the secondary school, interested in the past rather than the present or the future, has produced the

universally regretted split between it and the university. The university has therefore been obliged to fill the gap with elementary preparatory instruction which is outside its scope and naturally prolongs the duration of the courses.

What is therefore required is a reform of the secondary school teaching. This is the fundamental point on which all who took part in the discussion in the Education Section agreed. Although no such substantial agreement exists between the English secondary school and what in Italy is called "scuola media" as was found to exist concerning the needs for a reform of the studies directed to producing the medical practitioner, the man of science, or the research worker, the solutions proposed are the same in both countries. The secondary school should include certain kinds of instruction which at present are given at the university, and should impart to the prospective medical student certain fundamental notions of chemistry, physics, and biology, together with mathematical teaching so far as may be necessary for the ordinary current use of mathematics in experimental science. It is not, in my opinion, necessary to develop special classes for medical or engineering students in the secondary schools; it is sufficient that, once a certain stage of literary, philosophical, historical and classical education is reached, two main divisions are formed, the one providing the basis for literary, philosophical, and juridical studies, the other leading up to instruction in the positive and experimental sciences generally.

This is precisely what is asked for as a first reform of medical studies in England; it is precisely what I included in certain proposed reforms of medical studies in Italy, and published at the end of 1911 in the *Corriere della Sera*.

There remains, then, the question of the changes desirable in the university courses which a student, properly prepared, would begin at the age of about 18. Here, again, the bulk of the conclusions reached by those competent to judge in England are identical with those formulated in the series of articles just quoted. Intrinsic considerations suggest the introduction of courses of physics and chemistry specially directed to the problems of biology and the applications of medicine; of a course in general biology, which (in the place of the courses of botany and zoology, some of which are antiquated) should aim at giving the student exact notions concerning the science of life, co-ordinating and relating all functional and morphological phenomena, and elaborating laws applicable to physiological as well as pathological conditions. The subject of this biological course should be the general laws of evolution and heredity, and the phenomena due to the interference in the development of organisms accidentally in contact and mutually influencing each other. In this manner the course in general biology would present a great synthetic picture in which the separate medical sciences appear as constituent parts, and all the applications of medicine to any particular disease and to the development and well-being of man appear as episodes, and can be grouped in social complexes. In any perfectly organized system of teaching every single line of study should keep count of its function as an integral part of general biology, and should take every opportunity to emphasize the links, already discovered or yet to be investigated, connecting it with the other sciences. In this way it would be possible to combat the existing habit of watertight compartments, which is justly deplored as one of the grave disadvantages of the present system of teaching.

In this connexion I can quote an instructive experience: At the end of the war a large number of young ex-officers returned to our medical schools in Italy, and the problem was how to give them an education that would fill the gaps in their knowledge as effectively and quickly as possible. The Ministry of Public Instruction, rightly anxious not to place these students at a disadvantage by causing them to lose altogether the years spent at the front, had arranged for them to take shortened courses of a value equal to the usual annual courses. But they had not ventured to shorten the stages devoted to the primary scientific teaching—namely, anatomy, physiology, general pathology and pharmacology—so that the advantages of the shortening of the courses were finally lost, or the attempt to graft instruction upon these primary stages of the study had to be abandoned. In the University of Turin the professors of the above-mentioned subjects, desiring to safeguard the interests of their students, held a meeting at which they drew up a programme of their courses, with a special view to the order of instruction essential for the medical man and of fundamental importance for his education; they settled the lines of demarcation between their respective studies and divided between themselves the borderlands lying between science and science, thus avoiding the overlappings which usually occur, and are after all by no means devoid of usefulness, because they involve discussions which, presenting different points of view, have a special utility. The result of our efforts was excellent; we had the proof of it in the examinations—a proof which may be disputable in an isolated instance, but is convincing in large numbers; and the system of teaching, less formal, more conversational and wider, was much liked by the students, who admitted having derived great benefit from it, as it cleared their ideas and served as an introduction to future studies.

Another point is to be borne in mind—namely, that the teaching should aim at producing a good type of general practitioner, competent to deal with the ordinary ailments, and possessing in respect of certain special diseases that modicum of knowledge necessary for their diagnosis and required for a first treatment before passing the case on to a specialist. Now, it is generally recognized that five years of study suffice to produce a good type of general practitioner, always provided that secondary schools take over in part the preparatory instruction which at present falls upon the first year of university teaching. The additional knowledge required by the intending specialist ought to be acquired only after the standard of the general practitioner has been attained. The universities ought, according to the means at their disposal, their condition and traditions, to be able to provide a good theoretical and practical instruction in all branches of medicine. But what ought to be put an end to is the present state of affairs, certainly not very reassuring, in which a few more enterprising men set themselves up as particularly expert in certain branches in which their competence is anything but proved. This is the solution which the "Superior Council of Public Instruction" in Italy recommended to the Minister, and from the results of the discussion at Cambridge it appears to me that this system in its general outline might also be adopted in England.

When we come to examine the problem of medical education in its external aspect, it seems to me important to point out that in England, as well as in Italy, it occupies far more the attention of those engaged in teaching scientific subjects than those engaged in clinical practice. If we consider, for instance, the papers circulated in proof for the meeting of the Education Section at Cambridge, of which only a few were amplified by verbal communications by their authors, we find that, apart from the admirable introductory address of the President, Sir George Newman, they all discussed the question from different sides—from its zoological (Hickson), anatomical (Keith), physical (Rutherford), pathological (Lorrain Smith), and chemical (Smithells) aspects. The teachers of the scientific branches of the first three years are also in Italy much the most active in proposing reforms. What is the reason? There may be two; perhaps reforms appear specially desirable in the scientific and preliminary part of the curriculum; or perhaps the explanation is a certain indifference on the part of the clinical teachers towards the problems of medical education. Both reasons may be operative; but we must, above all, remember what the history of medicine teaches us—namely, that the discoveries which advanced medicine and have remained as a permanent acquisition, even on the practical and curative side, were always directly derived from scientific research in the physical-chemical and biological branches. This is the soil from which medicine in all its individual and social applications has sprung, and it is intelligible that the exponents of these constructive sciences should be the first to suggest the rational use of the materials on which they work; that they should regard with a certain diffidence the structure of traditional medicine as it is understood and accepted not only by the layman but also by the practising doctor; and that they should be anxious to rejuvenate the systems of instruction as in time they become obsolete, and to modify the whole of its structure, though it may be venerable in point of age and be found convenient by routine in the eyes of practical medical men, especially of that large number who are unable to add to the heavy burden of their professional work by trying to keep up with the continual progress of biology and experimental science.

Under these conditions, essentially human and explicable by the interference of various factors, partly working in opposite directions but of equal force, emerge ever more luminous the figures of those great clinical teachers who in the midst of the attractions of medical practice and of a reputation justly acquired among the public, have preserved the clear sense of the essence and functions of medicine as an evolving scientific organism and not as a rigidly dogmatic system. The figure of Sir Clifford Allbutt is eminent especially in this sense, and his manner of understanding the task of modern medicine and its renascence is proof of the width of his outlook. But such

men are rare; yet with the weight of their authority they are able to shift the balance of public opinion in favour of that reform of medical studies which the professors of the scientific branches of the medical faculties regard as essential. I have known another clinical teacher who was always guided in his teaching by the complex studies pursued in the field of physiology, pathology, and pharmacology, and founded a medical school famous for its pupils—Professor Camillo Bozzolo, who taught general clinical medicine in the University of Turin, and died within the last few months.

As the result of the foregoing explanations one important conclusion seems to me worthy of being emphasized. It is that two nations, not immediate neighbours, who, however, both played a most important part in the history of medicine, are agreed not only in recognizing that the education imparted to the medical man does not correspond to the present state of science and to the position due to the medical man as a coefficient in individual and social well-being, but in pointing out the measures which are called for to remedy a state of things which in the long run may prove definitely harmful. If the recognition of the present defects can in itself not claim to be a complete diagnosis, it is at least one element needful for the understanding of the evil, and if in addition, as I believe I have shown, there is also agreement on the system of a cure, we cannot, I think, call the ultimate success in doubt. All depends on whether we dispose of the necessary means. In this case they must be furnished by provisions which do not all lie within the compass of university organization, but require the assistance of the State and of the bodies in general charge of education.

The question, therefore, assumes the importance of an affair of State, a political character, and must appeal to action of a higher and wider order, must, above all, be supported by an enlightened public opinion—an opinion exceeding the limits of any one State, seeing that what is at stake is a civil, cultural, and social interest common to all nations. As regards the remedies, their selection, their preparation and extent, international agreement has already been reached. It appears, therefore, all the more opportune to extend these agreements to the exact definition of what is meant by "medical man" and to his education. Henceforth different types of medical men should no longer be permitted in the different countries, because this diversity can, after all, be but the gradations of one intrinsic value. Hence it would be desirable that, on the basis of concrete proposals such as have been put forward perfectly spontaneously in different countries, an attempt be made to adopt measures which, without being absolutely uniform, without fettering in details the tendencies, traditions and habits of work of any nation, without, in short, interfering in any way with the special aptitudes of the national mind, should yet lead to producing everywhere the best possible result in medical science and in the art of healing.

It is in this sense that I believe I have not made any new proposal, but have indicated the need for a preliminary international understanding among those who have devoted themselves to the problem of medical education, are conscious of its importance, and are fitted by experience to contribute to its solution. It is not a question of bringing together round a table another diplomatic conference—Heaven forfend!—of men, each having *in petto* a number of personal claims, and resigned with a bad grace to see them worn down in conflict with those of others. No; what is needed is to bind together into one sheaf forces which at present are already conscious of agreeing on the direction of their action, if not upon its intensity, but are as yet acting in isolation from each other. Sir George Newman is singularly fitted by his position to judge if and how a step in the direction indicated might be attempted. But, more than by his position, his competence is to my mind proved by the admirable Memorandum, which is to me the clearest and most convincing exposition of the present state of medical education in general and of the reforms which should be introduced, although the title of his book, *Some Notes on Medical Education in England*, appears to limit his observations to that country. That little volume, written with much knowledge and much love, should be in the hands of everyone who wishes to deal with this subject; it has most opportunely been confirmed and completed by the arguments developed by him in the Presidential Address which opened the Section of Medical Education at Cambridge.

THE congress of the Royal Institute of Public Health next year, which will be of an international character, will take place in the University of Geneva from May 10th to May 16th, 1921.

MEDICINE IN THE SCHOOLS.*

(Concluded from page 761.)

THE MEDICAL STAFF.

BY the end of 1919 the school medical inspection staff in practically all areas had regained at least pre-war strength, so that with few exceptions local authorities found it possible to undertake the whole of the statutory inspections. Of 5,118,000 children attending public elementary schools, 1,800,000 were examined. In the year ending March 31st, 1920, there were, excluding the specialists employed at the London school treatment centres, 1,630 school medical officers and dentists, an increase of 257 in comparison with the previous year. Of the total, 160 were women, including 114 whole-time officers. Upwards of 700 private practitioners, exclusive of those engaged at hospitals, undertook medical inspection or treatment, or both.

Sir George Newman defines the guiding principle and fundamental purpose of school medical inspection as "prevention rather than cure." It is suggested that during 1921 school medical officers should make special inquiry into the causes and treatment of dullness and backwardness, the incidence of rickets, and the effects of industrial processes on the physical welfare of the elder and adolescent pupils; a medical register of all exceptional children should be compiled as a starting-point for further inquiry and action. Regarding the position and duties of the school medical officer, Sir George Newman says:

"It should be borne in mind that the physical examination of children affords opportunity for valuable scientific work. Mere mechanical inspection may readily degenerate into a form of drudgery, and the school doctor should be watchful that his work is constructive, and, as far as practicable, is applied to the advancement of knowledge. The opportunity is exceptional. For example, the school doctor may throw much new light on the incidence and degree of defect or disease, on the physiology of the child and its wide variation (the functional disturbances of the heart, circulation, or nervous system), on the beginnings of disease, on the relation of physique to mental capacity, on the standardization of signs and symptoms, on local variations or age and sex incidence of abnormality, on the place of catarrh, on the 'effort syndrome,' on relation of child and adult physique, on types of constitution, and on the range of normality." . . . "Now that authorities are reorganizing their school medical service after the war, it is important that special attention should be devoted to the position and duties of the school medical officer and his medical and dental colleagues. Whilst it is essential that the principal medical officer responsible to the authority for the smooth and proper working of the service would be *primus inter pares* and the recognized chief of his department, it is equally necessary that all the professional officers of the authority should be accorded the status to which their profession and duties entitle them. It is only thus that the best medical work can be done. Their duties should be reconsidered by the authority from time to time in order that the full value of their skill and advice is obtained in behalf of the children. There should be variety in their work, scope and time for necessary investigations, and entire freedom to express their findings. . . . The medical staff are placed in the charge of the school medical officer for purposes of practical administration, but not that their individual professional services should be subordinated to his opinion or lost to the authority or of no advantage to the children. They form a vital part of the public health services of the State and should be brought into close touch with the authority. Attention should be given to the adequacy of their remuneration, their status, and their duties."

The Findings of Medical Inspection.

The gross defects are, on the whole, declining steadily, but in many areas there is still present the same high figure of preventable defects, pointing frequently to lack of intelligent care and foresight. The grosser forms of uncleanliness among children are now rarely met with, malnutrition is less in evidence, and protracted absence from school as the result of skin disease is less frequent; on the other hand, the minor grades of uncleanliness, dental defect, visual defect, rickets, diseases of the ear, nose, and throat, rheumatism, and tuberculosis, continue to make heavy claims on children. Inquiries bearing on the relation between physique and environment were made by Dr. H. H. Thomson, who compared the physical condition of school children in Letchworth Garden City and in the adjacent area of Hitchin, and by Dr. Lawrence, who compared that of the children attending schools on the Port Sunlight estate, and of those living in the immediate neighbourhood. The general health, cleanliness, and mental condition of the Letchworth children were on a

* Annual Report of the Chief Medical Officer of the Board of Education, 1919. Cmd. 995. H.M. Stationery Office. (Price 2s.)

slightly higher level than that of the Hitchin children; the Port Sunlight children were superior in respect of nutrition, cleanliness, and vision, but inferior in regard to severe dental caries.

Treatment.

Speaking generally, Sir George Newman regards the expansion of medical treatment as the principal characteristic at present of the school medical service; upwards of 300 local education authorities, out of 318, provide some form of treatment, and 53 make some provision for all defects. The scope of the treatment—at first mainly directed to defective children, and to minor ailments such as uncleanliness, ringworm, defective eyesight, discharge of ears, adenoids and enlarged tonsils, and dental caries—has widened so as to include rheumatism, certain forms of paralysis, all forms of tuberculosis, diseases of the nose, and mastoid disease. In the areas of twenty local education authorities school clinics have been established for the first time, and twenty-five authorities have opened additional clinics. There are now 700 school clinics in the country—an increase of over 100 during the year. In London 47,414 children—nearly 12,000 more than in 1918—were treated for minor ailments. For ringworm 101 local authorities made provision of *x*-ray treatment; at Kingston-on-Hull, Dr. Fraser prefers ethyl iodide treatment, and at Harwich Dr. Porter reports successful and speedy treatment of ringworm of the scalp by massage with equal parts of common salt and vaseline. In 193 areas there were 75,355 children in whom treatment of enlarged tonsils and adenoids was necessary; of these, 36,221 received treatment (operative or otherwise), with 22,681 cures and 8,062 improvements. About half the authorities (151) made provision for operative treatment—carried out in sixteen instances by the school medical staff, in forty by doctors not on the school medical staff, and in the remaining instances at hospitals. In London and elsewhere there has been an extension of the provision of in-patient accommodation for the days immediately following the operation.

The report as to the prevalence of dental caries could not well be worse. Even in London, where some improvement is shown in comparison with previous years, 51.5 per cent. of the children examined have some dental defect. In Sunderland 94.5 per cent. required dental treatment; in Hull, 85 per cent.; in Devon, 68.9 per cent. Much parental ignorance and apathy are reported; at Stoke-on-Trent, for example, in 49.5 per cent. and at Leeds in 52.3 per cent. of the children found to require dental treatment, this was withheld. At present the services rendered by the school dental staff do not cover more than about one-tenth of what is required to deal with the school population; the shortage of dentists constitutes one causative factor that cannot at present be easily remedied, but it is suggested that the assistance, properly supervised, of dentists by trained but unqualified dental dressers, as approved in principle by the Dentists' Act Committee, may be of value.

Special Schools.

The recognition of 23 new special schools brings their total number to 488, providing accommodation for, roughly, 3,300 blind, 4,600 deaf, 15,800 mentally defective, 6,300 physically defective, 2,800 tuberculous, and 500 epileptic children; there are also 2,710 places in open-air schools. For the deaf, in addition to the special schools and classes, there are trade schools and evening schools, but so far no secondary schools; 199 schools for the mentally defective include 21 residential institutions. Special classes have been instituted with much success by many authorities for those children who are on the borderline between being dull and backward and being mentally defective. Facilities for open-air education are still very limited, but 8 new open-air schools have been recognised and proposals are being considered by the Board in respect of 40 additional schools. Day open-air schools number at present 25, and residential open-air schools of recovery 20. The incidence of tuberculosis amongst school children appears to show a slight increase; at routine examinations 0.64 per cent. of children showed signs of definite tuberculosis in 1919. There are 8 day schools, of which 3 are in London, for children suffering from pulmonary tuberculosis; in addition, four London hospitals providing for children suffering from non-pulmonary tuberculosis have been certified as day special schools. Thirty-eight residential sanatoriums have been recognized by the Board for the treatment of tuberculous children. Close co-operation between the school medical officers and the tuberculosis medical officers of the district should, it is said, be secured, and it is desirable that all children's sanatoriums should be recognized by the Board of Education under the Elementary Education (Defective and Epileptic Children) Acts, in order that provision may be made for early treatment combined with educational training, which has a definite therapeutic as well as economic value.

Physical Education.

Much importance is attached to physical education, which "if properly conceived and employed is one of the most powerful instruments of preventive medicine." In public elementary schools the alterations introduced in the syllabus in 1919 have been well received, and the daily lesson, in addition to organized games in the playgrounds and parks, is speedily gaining ground. Other means of promoting physical education are the teaching of English folk and country dances, for which many teachers evince much enthusiasm, and the institution of play centres. The break in the continuity of physical education which occurs at the end of the school age will be remedied to some extent in the new continuation schools, but there is said to be need for a voluntary representative body of experts and others (working in co-operation with the local education authorities) to organize physical exercises and recreation for the great mass of the people.

Physical Deficiency and Juvenile Employment.

According to the provisions of the Education Act, 1918, children under 12 years of age may not be employed in any circumstances; over this age their employment is restricted and regulated. A model form of by-law is suggested, according to which in scheduled occupations the employment of children is conditional on the granting by the school medical officer of a certificate that such employment will not be prejudicial to health or physical development, and will not render the child unfit to obtain the proper benefit from his education. The local education authority is empowered also to prohibit or to modify employment which is reported by the school medical officer to be prejudicial to the child. The Board lays great stress on the importance of ascertaining and maintaining the condition of health of employed children; education authorities are advised that:

(1) The school medical officer should make a careful examination of children about to be employed; (2) adequate arrangements should be made for following up these children by school nurses, care committees, or school attendance officers; (3) arrangements should be made for the speedy treatment of any defects found at examination and for the re-examination of such defects at a later period; (4) the clothing and boots of employed children should be inspected by the school attendance officer, especially in the case of those who are employed out of doors before school hours; (5) arrangements should be made to ascertain that children are properly nourished and obtain sufficient recreation.

Close co-operation is enjoined between the school medical officers on the one hand, and on the other the certifying factory surgeon and the juvenile employment committee of the education authority or of the Ministry of Labour. The report contains a valuable memorandum, which has been prepared by Dr. Hamer for the guidance of children's care committees, showing the disabilities from a medical point of view attaching to certain employments. The new power conferred upon local education authorities by the extension of the work of the school medical service to continuation schools is described as a far-reaching and fundamental reform which marks a new chapter in preventive medicine. The duties of a school medical service now include:

(1) The medical examination of the child employed under the age of 14, both at the beginning of its work and thereafter at regular intervals. (2) The medical examination of all "leavers" and the advising of their parents with regard to their future employment. (3) Attendance of the school medical officer at school conferences, at conferences of employers and employees, and at meetings of juvenile advisory committees, in order to advise as to the employment of children having defects which make some types of employment unsuitable or injurious to the child's health. (4) Provision of medical treatment for "leavers" with as little delay as possible, in order that they may begin work without physical defect as a handicap. (5) Medical examination and periodic re-examination of children whose parents have applied for a licence for them to take part in entertainments. (6) The establishment of a closer co-ordination between the school and industrial occupation.

British Medical Journal.

SATURDAY, NOVEMBER 27TH, 1920.

NATURE'S TERATOLOGICAL EXPERIMENTS.

MONSTROSITIES have hitherto been regarded as being among the useless things. If they have been looked at discriminatingly at all, they have probably been labelled as strange failures to reach the normal or as weird deviations from embryogenetic formation hardly deserving a front place on the shelves of a pathological museum, sometimes troublesome to bring into the world, always embarrassing to doctor and nurse, and terribly distressing to expectant mothers and fathers. Their causation, attractive simply from the extreme difficulty which it presents to the investigator, is still dark, and to many it has seemed not sufficiently practical even to invite research. It may be, as recent workers have supposed, that monstrosities are due to exactly the same causes (toxic, toxaemic, microbic, traumatic) as produce diseases, the striking difference in results being due to the period (the embryonic) when these morbid forces are in operation; but although discoveries along this line may raise hopes of ultimately preventing teratological productions, the investigation of individual monsters will still remain rather a waste of time because of its inherent futility. Such is a fair estimate of the way in which teratological specimens have been looked at in the past.

The convinced ante-natal pathologist has never taken this gloomy view of the possibilities of his subject, and has quietly worked on, dissecting, recording, cogitating; and recently the Medical Research Council has encouraged him to go forward, and has made three or four grants to well qualified research workers to enable them to make careful *post-mortem* examinations of all stillbirths and early neo-natal deaths in three or four of the maternity hospitals of Great Britain. Dr. F. J. Browne of Edinburgh, one of these workers, has published in the October issue of the *Edinburgh Medical Journal*[1] an article on the "Anencephalic syndrome in relation to apituitarism," in which he shows that from even so uninviting an investigation as the morbid anatomy of the anencephalic monster conclusions of an eminently practical and suggestive nature may be drawn. In other words, teratology is being led within the charmed circle of the subjects which will repay investigation in something more than the paper money of abstruse and merely recondite interest.

The outstanding feature in anencephaly is the absence of the cranial contents, of the cranial bones, and often also of the spinal cord, but with this leading and very striking feature there are very often associated other secondary characters, such as protruding eyeballs, deformed ears, projecting tongue, and well-marked adiposity. Dr. Browne in his investigation has been struck by the constancy with which these secondary characters appear and by their association with changes in such internal organs as the thymus, the suprarenals, and the ovaries. The idea came to him that these secondary characters, which he has called, perhaps with a little violation of the exact meaning of the term, "the syndrome of anencephaly," might be explicable by the destruction of some organ which lay inside the cranium. Having arrived at this point, it was comparatively simple to take another step in reasoning and whisper to himself the word "pituitary."

Obviously the next step was to satisfy himself and others that the pituitary gland, even in its minutest part, was absent in anencephaly. This he may justly claim to have accomplished when he read his article and showed his specimens at a meeting of the Edinburgh Pathological Club in March last. The most rigorous search on the basis cranii of his anencephalic fetuses showed absolutely no trace of a pituitary gland; it had been destroyed, or more probably it had never been permitted to exist there, in the early weeks of ante-natal life by some morbid agent whose exact nature Dr. Browne does not at present attempt to state. It may be suggested that the causal agent was adhesion of the amnion, but in the meantime the argument need not be delayed till that matter is elucidated. The next stage in the investigation was naturally enough the attempt to answer the question what changes in the embryo and fetus would destruction (equivalent to operative removal) of the pituitary gland produce. They would be, it may be supposed, the changes which follow pathological or experimental destruction of the pituitary gland after birth, as they would be modified by the peculiar features of ante-natal life in its embryonic and fetal stages. The rest of Dr. Browne's paper is occupied by the demonstration, anatomical and histological, that that is just what the anencephalic syndrome is. The syndrome, consisting of protruding tongue and eyeballs, of nasal aquilinity, of obesity, of thymus hyperplasia, of suprarenal and genital hypoplasia, and of stunted growth of body and limbs, agrees in the main with the features of what are called hypo- and a-pituitarism.

Here, then, is Nature herself experimenting upon the growing and developing infant in a laboratory perfectly situated and completely equipped for the purpose: for the interior of the uterus is germ-free; in it the most rudimentary or maimed fetus can continue to live till birth. We must look at the matter in an impersonal way and avoid even the suggestion that Nature incurs or invites blame in any way with regard to the production of monstrosities; the correct standpoint is that, an anencephalic embryo having been caused by (say) a syphilitic toxin or a mineral toxic substance, or something else, the uterine environment serves as a location in which all the structural and physiological consequences can be carried through without interference. Dr. Browne's paper does, however, imply a very interesting question, namely, would a critical investigation of the anencephalic fetus twenty years ago have expedited or anticipated the information slowly acquired by experiment regarding the pituitary gland? If so, may it not be well to look for the syndromes of other marked types of monstrosities, such as the exomphalic, the sympodic, and the cyclopic, and see whether these have any relation to the functions, known or unknown, of other endocrine organs?

Dr. Browne is himself so careful not to press beyond the reasonable conclusions warranted by the facts he has discovered that it may seem injudicious to go outside the limits he has imposed on himself, but we would venture to make two suggestions. The first is that the destruction of the cranial and spinal contents involves many other important structures besides the pituitary, such, for instance, as the pineal gland and the basal ganglia; this may make the resulting changes more complex than is at present

[1] *Edin. Med. Journ.*, N.S., XXV. p. 286. October, 1920.

suspected. In the second place some anencephalics do not show the syndrome completely. Some are of what may be called the pretty type, it being of course clearly conceded that "pretty" is here used relatively, for only by a violent effort of catachresis could any anencephalic fetus be regarded as other than superlatively ugly. Now, it would be most interesting to know whether in these less ugly specimens there are traces of the pituitary gland to be found amongst the débris on the basis cranii. In other words, would a defective development of the anencephalic syndrome point to a partial functioning of the pituitary gland?

At any rate, teratology may in future look her sister subjects in the face, her reproach of scientific infertility having been taken away.

TUBERCULOSIS IN AUSTRIA.

The Austrian Government has issued a report by Dr. Siegfried Rosenfeld[1] on the mortality from tuberculosis during and since the war within the territories of the present republic of Austria. It is deserving of attention. Throughout the country there has been a great increase of mortality, but this has most seriously affected the industrial districts. Before the war the deaths from tuberculosis were decreasing, as in other countries. Thus, in Vienna (excluding deaths of non-residents) 2,725 females died of tuberculosis in 1912, and the figure had fallen to 2,635 in 1914; there was an appreciable increase, to 3,004, in the first complete year of war, and the quotas of the four following years, 3,543, 4,469, 4,729, 5,018, show the *via dolorosa* trodden by the victims of irresponsible and unscrupulous power. In our own country the war was associated with a slight but quite sensible increase of mortality from tuberculosis amongst women, which chiefly affected the adult ages of life and has been, with some probability, attributed to the introduction of large numbers of women to factory work with consequent overstrain. The scale of the increase in Vienna has been vaster, and whereas in England and Wales the rates at most ages for 1919 fell to a pre-war level, the Viennese figures for 1919, especially at ages between 35 and 65, are worse than those of any former year.

The inference drawn by Dr. Rosenfeld is that the prime factor has been the progressive worsening of nutrition due to the economic consequences of the war. Dr. Rosenfeld pushes his argument further than this: he suggests that the war has afforded an experimental proof that the decline in the death rate from tuberculosis going on before was not a consequence of measures to segregate "open" cases or to diminish in other ways opportunities of infection, but was dependent upon a general amelioration of economic conditions leading to the attainment of a better standard of nutrition. We have noticed before in these columns that many writers in this country have recently advocated similar opinions, and although, apart from the war-time data, Dr. Rosenfeld does not produce any new evidence, his exposition is clear and interesting. Dr. Brownlee has suggested that the response to environmental conditions of different types of phthisis is not uniform, and Dr. Major Greenwood has argued that the statistics of occupational phthisis and a comparison of male and female mortality lend support to the contention of Dr. Leonard Hill that a lowering of general resistance dependent upon the unphysiological conditions of factory life is a factor of prime importance.

[1] *Die Aenderungen der Tuberculosehäufigkeit Oesterreichs durch den Krieg.* By Dr. S. Rosenfeld, Wien. 1920. (Issued by the Volksgesundheitsamt.)

Quite recently some distinguished bacteriologists have put emphasis upon the immunizing value of early non-massive infection. Dr. Rosenfeld discusses this topic at some length, but argues that the curve of age incidence is irreconcilable with the theory. This argument is, we think, precarious; it is not a necessary consequence of the theory that the death rates at ages should uniformly decline, and Dr. Rosenfeld's remark—"What sort of immunity is this which can be destroyed by external conditions?"—is merely *ad captandum*. The heavy incidence of tuberculosis upon non-European troops in the war zones is a fact difficult of explanation upon the hypothesis favoured by Dr. Rosenfeld. Whether, however, those who attribute the result to absence of immunizing infections in childhood have sufficiently attended to the possibility of selection—whether we call it natural selection or artificial selection is a matter of words—is open to doubt.

The practically important point is that Dr. Rosenfeld's report, like the publications of the writers we have named and several recent letters in our columns, brings out the lack of agreement respecting the fundamentals of etiology which is found amongst competent students of the tuberculosis question. The dispute is not of mere theoretical interest; its settlement would gravely affect administration. To take only two points: Were Dr. Brownlee in the right, the routine employment of tuberculin must be unscientific. If the doctrine of protective natural inoculation in childhood be accepted, the scale of values attaching to different items in the programme of social reform will be changed.

The most hopeful feature of the position is, we think, the better temper in which the discussion is conducted. It is now found not only to be possible but to be easy to avoid that *odium theologicum* which was the fashion of the last decade. The team work which the war encouraged is responsible in part for this. The value of different lines of research is more generally realized; this realization will, we believe, lead, perhaps within our generation, to the discovery of great truths.

LETHARGIC ENCEPHALITIS.

Lethargic encephalitis, both in its clinical and pathological aspects, continues to excite interest all over the world, and the increasing experience of many observers has inevitably enlarged our conception of the disease. The steadily increasing volume of literature devoted to its various aspects is sufficient evidence of the amount of work which has been directed to its study. Much attention has been focussed upon the disease in France, and the *Revue de Médecine* has published[1] a series of contributions which may be said to crystallize the present opinions of French authorities, in so far as any finality of view can be attempted. Durand, who deals with its clinical aspects, points out once more that it is by no means the new disease it was at first considered to be; epidemics with very similar features have been reported at various times in many countries. The characteristic syndrome is composed of fever, somnolence or lethargy, and ocular palsies, and Netter's statistics place the frequency of lethargy and ocular palsies as high as 75 per cent. of all cases. It is suggested, therefore, that the virus shows a special disposition to attack the mesencephalon, possibly by a process of direct extension through the cribriform plate or the ethmoidal sinuses. But while this triad of symptoms is regarded as constituting the most typical clinical picture, it is recognized that almost any combination of nervous symptoms may be produced. An acute inflammatory lesion of the central nervous system may reasonably

[1] *Revue de Méd.*, Paris, 1920, No. 6.

be expected to produce very different effects, and further experience fully bears out such an expectation. Thus Dunn and Heagey, from a study of 115 American cases, have postulated no less than eight different clinical types.[2] Little benefit, however, is to be gained by an attempt to establish new clinical syndromes in a disease whose nature and pathological characters render a wide diversity of symptoms inevitable. One clinical variety, however, certainly deserves special mention—namely, the so-called Parkinsonian type, which gives a picture of an acute case of paralysis agitans. Recently a case has come under our notice in which the symptoms almost exactly resembled those of a classical case of disseminated sclerosis; we do not consider it necessary, however, to erect this into a new clinical type. As we have previously stated in these columns, the epidemiological and general features of the disease are of greater diagnostic value than the particular localization of the lesions in the central nervous system. In the same number of the *Revue* Harvier summarizes the various experimental researches hitherto undertaken to elucidate the nature of the infection, as follows: (1) The virus of epidemic (lethargic) encephalitis is pathogenic for the rabbit, and can be maintained by successive passages through these animals, producing nervous symptoms and histological lesions identical with those observed in man. (2) The virus may be inoculated into the rabbit by intracerebral or intraocular injection and by injection into the peripheral nerves and through the previously damaged nasal mucous membrane. (3) The virus is a filtrable one. (4) The virus is not pathogenic for the monkey or the guinea-pig when it is obtained direct from man, but it becomes so after several passages through the rabbit. In this respect it differs from that of acute poliomyelitis, which is directly pathogenic for the monkey. At present no absolute diagnostic criterion can be said to be established, and it cannot be too strongly urged that every care must be taken to exclude such conditions as vascular lesions of the brain, tuberculous meningitis, and syphilis of the nervous system in its different forms. It is more by the painstaking exclusion of such factors and by the careful study of the symptoms of onset, particularly in its epidemiological aspects, than by trying to fix any particular case into one of the many described clinical types of the disease, that diagnosis should be reached. Increasing experience, again, is leading to a more cautious prognosis, for in many cases the symptoms last much longer than might at first be expected. The final duration of its sequelae in the shape of the many disturbances of function in the central nervous system has yet to be ascertained. In a certain small proportion of cases actual relapses seem to have occurred. Treatment is still far from satisfactory, as might be expected from the nature of the disease. Beyond purely symptomatic treatment there are only two methods which can claim any success. The first is that of fixation abscess, practised largely in France for this as for other conditions. Another is by the administration of hexamine or urotropine. This has usually been given by the mouth, and its value by this route is much open to question. Recently Crawshaw[3] has reported in our columns a case treated by the intravenous injection of hexamine, as much as 45 grains dissolved in 10 c.cm. of normal saline being given at a time. Further experience of this method of treatment will be awaited with interest.

MALARIA IN ENGLAND.

IN to-day's issue of the JOURNAL (p. 811) will be found a very interesting account of an indigenous case of malignant malaria. Professor Glynn and Dr. Matthews, who report the case, state that the patient, a girl of 18, was admitted into the Royal Infirmary, Liverpool, suffering from obscure symptoms pointing to meningitis. She was *in extremis* on admission and died shortly afterwards. The autopsy revealed the true nature of the case, malarial parasites being found in abundance in the blood and in smears from the spleen. An investigation was carried out by Dr. Blacklock to determine where the infection could have been acquired, and it then transpired that the girl had been at a health resort in the North of England at the end of September, just before the fatal illness developed. She had spent part of a day in a valley which contained many hibernating larval and adult anopheles mosquitos, and presumedly must have been bitten by one of these mosquitos, which, somehow or other, had got infected with malaria. Indigenous malarial cases have cropped up quite commonly of late, and the authors quote James's figures of 330 cases occurring between September, 1917, and the end of 1918. All of these were benign tertian infections. Malignant infections have, however, also been met with, and this now furnishes another example with a fatal result. The moral is that in all obscure cases the blood should be examined, with the view of eliminating the possibility of malaria. It would certainly have been done in the case mentioned, but there was no time before the patient died. An examination conducted earlier would probably have shown the parasites, and quinine might have saved the patient's life. The authors note at the end of their paper that some other tropical maladies, notably dysentery, have also been cropping up in England. The moral again here is that the stools should be examined carefully in all cases of diarrhoea or bowel disorders.

THE PRESCRIPTION SIGN.

SINCE the days of the Romans it has been the practice of medical men to head their prescriptions with either the Latin word Recipe, "Receive," or with its abbreviations Re or R$_{\text{e}}$, or with the symbol ℞; since towards the end of the nineteenth century the faultily formed abbreviation R or r has also been employed at times. The interpretation of the symbol ℞ has long been a matter of discussion, and it is now generally held to be one of the astrological denotations of the planet Jupiter, alleged to have been employed by Roman physicians as an invocation to the most powerful of the Olympian gods to augment the efficacy of the drugs prescribed.[1] Professor Gilbert of Paris devotes a chapter in his recent book on *The Art of Prescribing*[2] to showing that this interpretation of the symbol ℞ is erroneous, and that in medical prescriptions it represents no more than a "lower case" letter r with a bar to show that it is an abbreviation for the Latin word recipe. He points out that the symbol ℞ has several different interpretations in literature. In astronomy it stands, as has been indicated, for the planet Jupiter, and is explained by Flammarion as a barred letter Z or abbreviation of the word Zeus, Jupiter being the Latin form of the Greek Zeus pater. In alchemy ℞ represents the metal tin. In botany it is used as an abbreviation to indicate that a plant is intermediate between annuals and perennials in duration of life, a *plante vivace*, to use the French term. Why, Professor Gilbert asks, should the use of ℞ in prescribing be taken as an allusion to a plant or a metal, or even to Jupiter, in view of the fact that the Olympians counted among their numbers the most celebrated of all medical specialists, namely Aesculapius? He reproduces an example from a manuscript dated 1454, in which the symbol ℞ is undoubtedly a barred letter r, occurring at the end of an abbreviation of *gariofolorum*. According to Professor Gilbert, therefore, the notion advanced by Stokvis five-and-twenty years ago, that the symbol ℞ placed at the head of a medical prescription stands for an invocation to Jupiter, lacks both proof and probability. The confusion is due to a mere typographical coincidence; ℞ represents both the barred lower case letter r, short

[2] Dunn and Heagey, *Amer. Journ. Med. Sci.*, clx, No. 4, October, 1920, p. 568.
[3] Crawshaw, BRITISH MEDICAL JOURNAL, 1920, ii, 628.

[1] See BRITISH MEDICAL JOURNAL, 1911, i, 581.
[2] *L'Art de Prescrire.* Par Professeur Gilbert, Professeur de Clinique Médicale à l'Hôtel-Dieu de Paris, etc. Paris: J. B. Baillière et Fils. 1920. (Cr. 8vo, pp. xv+373. Broche, Fr.12; cartonne, Fr.16.)

for recipe, and the barred letter z, short for the planet Jupiter originally, and, by extension, also short for the metal tin and a *plante vivace*. The most correct abbreviation to employ in writing prescriptions is, in his opinion, the barred capital letter Ƀ.

UNIVERSITY POVERTY.

We publish elsewhere brief particulars of appeals made by two more universities in England and by one in Scotland for large capital sums to enable them to carry on. In all three instances the sum asked for is half a million. The justification for the appeal offered by the two English universities is identical with that put forward by several other universities which are making similar appeals: teaching and investigation are more costly than they were, and there are more subjects in which teaching and investigation are needed. The appeal by Edinburgh is on a somewhat different footing. The university finds itself faced with the urgent necessity of at once spending about half a million sterling on new buildings in the departments of medicine, chemistry, and natural history. A site of 115 acres at Liberton, on the south side of Edinburgh, has been acquired, and buildings for the new school of chemistry are in an advanced stage, and others for zoology will, it is hoped, shortly be begun. To meet the needs of medicine a site has, with the co-operation of the Royal Colleges, been secured close to the Royal Infirmary, on which the Lister Institute, consisting of a group of buildings for the scientific study of medicine, will be erected. The Edinburgh appeal is addressed in the first place to its alumni, who are told that if half a million can now be raised the university will be able to tide over its present difficulties. The appeals of Newcastle and Birmingham are primarily to local patriotism, and both universities can give special reasons why those interested in local industries should deal liberally with them. It was Mr. Joseph Chamberlain, when making his appeal for money to found the University of Birmingham, who first laid down the principle that State aid of a university in an industrial area could not be expected unless the people of the area proved the sincerity of their desire by putting their hands in their pockets; and the University of Birmingham now appeals to the local education authorities, the industries, and the citizens of the Midlands to make substantial grants and benefactions, because "such grants or gifts will in all probability secure an equivalent from the Government."

THE SURGICAL TREATMENT OF CHRONIC GASTRIC DISORDERS.

The founders of lectureships at medical colleges and societies, if they could pay a brief visit to the scene of their former activities, would often be surprised and much perplexed by the substance of the discourses they originally endowed. These lectures serve a most useful purpose by providing opportunities for the publication of researches which otherwise might never see the light of day or be left incomplete, and of reviews of contemporary medicine. Three lectures given by Mr. A. E. Maylard are a case in point, and certainly Dr. James Watson (1787–1871), who founded these lectures for the encouragement of medical science, would wonder at this eminent surgeon's remarks on "Some chronic gastric disorders."[1] Four James Watsons find a niche in the *Dictionary of National Biography*, but as none of them is medical, it may not be out of place to draw attention to the high position held in the first half of the last century by Dr. James Watson in Glasgow; he was on three separate occasions President of the Royal Faculty of Physicians and Surgeons, was President of the Glasgow Medical Society, and later of the (now Royal) Medico-Chirurgical Society of Glasgow, an honour shared by Mr. Maylard; and as successively surgeon and physician to the Royal Infirmary would have taken a keen interest in the medico-chirurgical discussion of gastric disease. Mr. Maylard rightly believes that the problems of gastric disorder are so complicated that the responsibility for treatment should rest upon the combined opinion of both physician and surgeon. He has lived through the period of what may be called the surgical invasion of the stomach; this is shown by the record of gastric cases admitted into his wards; between 1892 and 1919 a total of 979 gastric cases were admitted, but only 13 of these were before 1899. His experience leads him to the conclusion, which would have appeared extreme not very long ago, that cases of undoubted gastric disease which fail to recover completely after a reasonable period of conservative treatment should be operated upon. But in the first lecture, which appeared in our issue of May 8th, 1920, page 626, on chronic gastric disorders dependent upon causes other than those of an ulcerative, carcinomatous, or obstructive nature, stress is laid on the large number of chronic gastric disorders that come under the surgeon's notice, and, though requiring careful discrimination, should not be submitted to operation. Among the varied forms of dyspepsia commented on, that termed "students' dyspepsia" may be recalled, as it is a more or less chronic disorder, ascribed to the abstraction of blood from the stomach to the brain by mental activity directly after food, and often alarms the sufferer, who, if a disciple of Aesculapius, invariably decides that he has cancer. Thirty years ago chronic ulcer was diagnosed with much greater confidence than it is now, when laparotomy so often reveals the real cause for the symptom complex. The diagnostic difficulties were clearly stated by Sir Berkeley Moynihan in our columns a year ago (December 13th, 1919, p. 765); he considered that a correct opinion could be obtained by *x*-ray examination in about 90 per cent. of the cases. Mr. Maylard, in discussing this dictum, concludes that it must be taken with a grain of salt, or, rather, with the added assistance of the clinical phenomena; for although skiagraphy may suggest, and sometimes very strongly, the presence of an ulcer, the symptoms must in many cases support the suggestion to justify any degree of certainty in diagnosis; he therefore maintains the view that exploratory laparotomy remains the only means of arriving at a certain diagnosis. Believing that a well-marked ulcer of the stomach or duodenum very rarely heals, Mr. Maylard advocates its excision, and finds that in experienced hands partial gastrectomy, though a somewhat severe procedure, is a particularly safe operation. Among 878 cases of gastric disorder he found that 17 per cent. were carcinoma, and that of these 50 per cent. were in an inoperable state; early exploration is therefore urgently required, and to facilitate this some attempt to promulgate information on the subject among the public, such as has been adopted about other diseases, should be made. At the end of his third lecture, on "pyloric obstruction," he summarizes his experience and expresses his conviction that many professed specialists in stomach diseases often do much more harm than good by persisting in palliative measures, and thus increasing the number of cases of inoperable carcinoma.

[1] *Some Chronic Gastric Disorders.* The Dr. James Watson Lectures delivered by A. Ernest Maylard, Consulting Surgeon to the Victoria Infirmary, Glasgow, at the Royal Faculty of Physicians and Surgeons, Glasgow, on March 11th, 18th, and 25th, 1920. Reprint.

VACCINATION.

Quite recently the important work of the Jenner Society was taken over by the Research Defence Society. This action has been quickly followed by the publication of a most useful pamphlet entitled *Vaccination*, by Dr. Mary Scharlieb.[1] Inquiries are continually being made by medical men and members of the general public for a

[1] *Vaccination.* By Mary Scharlieb, C.B.E., M.D., M.S. Price 1s. Published by the Research Defence Society, 11, Chandos Street, W1. 1920.

concise and up-to-date statement of the case for vaccination. Dr. Scharlieb's excellent pamphlet exactly supplies this want in the brief space of 30 pages. An interesting narrative is given of the history of vaccination. The controversial aspect of the question receives impartial consideration. Recognizing the dislike of compulsion as "an exaggeration of one of our national characteristics," Dr. Scharlieb advocates the substitution of argument and urges more careful education of the public and an endeavour to influence public opinion by this sound method. The case for vaccination is clearly demonstrated, and the pamphlet should be widely circulated in the interests of the method of education so wisely advocated. Undoubtedly the recent recrudescence of small-pox in various parts of England and Scotland has caused anxiety to the authorities. The neglect of vaccination is one of the chief sources of this anxiety. For this reason the Research Defence Society may be congratulated on the opportune issue of such an excellent addition to the popular literature in defence of vaccination. Much has been said and written about the so-called "Leicester Method." The average person who knows anything about the vaccination controversy is apt to conclude that any method associated with Leicester must of necessity exclude vaccination. Dr. Scharlieb devotes a considerable portion of the limited space at her disposal to a fair and reasonable statement and discussion on the "Leicester Method," and concludes that this is not a triumph for the anti-vaccinist, since it relies on vaccination as an effectual resource even when used at the eleventh hour. A quotation from Dr. J. C. McVail's Milroy Lectures (1919) shows how the Leicester Method has been changed almost beyond recognition as against the "method" given in evidence before the Royal Commission of 1896, which did not include recourse to vaccination. On the first page will be found a very impressive graphic argument in the shape of a photogravure reproduction of a portion of the Gloucester cemetery where lie buried 279 unvaccinated children, under 10 years of age, who fell victims to the epidemic of small-pox in Gloucester in 1895-96. The concluding portion has reference to the recent epidemic of small-pox in Glasgow. It can confidently be said that this well written pamphlet admirably serves the purpose for which it is intended.

THE NEED FOR A RADIOLOGICAL INSTITUTE.

DR. ROBERT KNOX, in his presidential address before the Röntgen Society on November 18th, discussed the radiologist's need for fresh apparatus. He deplored the lack of unanimity regarding the development of instrument design, which made standardization impossible. Nevertheless, a recognition of certain special needs was emerging—the need for increasingly powerful apparatus, for *x*-ray tubes capable of steady output, and for a method of exactly measuring radiation. He called upon the designers of high tension apparatus to set to work to produce more powerful apparatus. It seemed likely that radio-therapeutic work would be impeded in its advance unless a more penetrating radiation were available; at all events, if such high penetration were not required for treatment, this could only be proved after extensive experimental work for which the apparatus was lacking. At the suggestion of the British Scientific Instruments Research Association a meeting of medical men, physicists, and manufacturers had been called, and this resulted in the formation of a small committee empowered to draw up a list of questions about the design of apparatus required for radiographic and therapeutic work, and those questions were now being circulated among the radiologists of the country. Dr. Knox maintained that the development of radiological apparatus and technique called for co-operative experiment by physicists, technicians, and medical men. These problems could only be handled comprehensively in a radiological research institute with a suite of laboratories, lecture theatres, and demonstration rooms. The establishment of such an institute was the object of the Mackenzie Davidson Memorial Fund. It would be directed by a general committee, with subcommittees for the physical, technical, medical, and photographic sides of the work, each subcommittee supervising a section of the institute, and all conferring together in cases of difficulty. An Institute of Physics was coming into being; why not an institute of radiology adjoining it or incorporated with it? At Petrograd a new institute of radiology had lately been inaugurated in a building of recent construction. If Bolshevik Russia, asked Dr. Knox, could erect an institute of radiology in the midst of its great upheaval, was the United Kingdom going to be outdone?

THE NEW "LANGHAM" TELEPHONE EXCHANGE.

THE controller of the London Telephone Service informs us that, in order to provide additional telephone facilities in the area between Oxford Street and Regent's Park, and to relieve the pressure at the existing Mayfair Exchange, preparations are in hand for the opening of a new exchange in Vere Street, W.1, which will be called "Langham," and probably be ready in January next. The area to be served by the "Langham Exchange" includes Harley Street and the adjacent thoroughfares, and about 600 exchange lines rented by members of the medical profession will be changed to "Langham" numbers. The new numbers of all the lines to be transferred will be published in the next issue of the *London Telephone Directory* due in April, 1921; but during the interval between the opening of the "Langham" Exchange and the distribution of the directory, and afterwards if necessary, special arrangements will be made both to advise callers of the changes and to divert calls to the new numbers.

PROFESSOR HUGH MACLEAN, M.D., D.Sc., has been appointed director of the Clinical Medical Unit at St. Thomas's Hospital.

THE first scientific meeting of the new Section of Tropical Medicine of the Royal Society of Medicine will be held at 1, Wimpole Street, on Tuesday, November 30th, at 5 p.m. After the brief formal business a paper will be read by Dr. F. G. Rose on "The Incidence of Filariasis in British Guiana," giving a summary of his work under the auspices of the Colonial Office. This will be followed by demonstrations.

THE Colonial Secretary has appointed a committee to consider what steps can be taken to secure the assistance of the universities of this country in carrying out the research work essential to the protection of the inhabitants of the colonies and protectorates from disease and to the successful development of their veterinary, agricultural, and mineral resources. The chairman is Lord Chalmers, and among the members are Sir John Rose Bradford, K.C.M.G., F.R.S., physician to University College Hospital, Sir Walter Fletcher, K.B.E., F.R.S., secretary of the Medical Research Council, Professor E. B. Poulton, the distinguished incumbent of the Hope chair of zoology in the University of Oxford, Sir David Prain, C.M.G., C.I.E., I.M.S. (ret.), director of the Royal Botanic Gardens, Kew, and Sir Stewart Stockman, chief veterinary officer to the Ministry of Agriculture.

THE Edinburgh Medical Missionary Society is now in its eightieth year. Its function is to supply to all the churches fully qualified physicians and surgeons for service as medical missionaries all the world over. At least eighty men and women are required at this moment to fill vacancies which have occurred during and since the war. The president is Mr. C. W. Cathcart, C.B.E., F.R.C.S.; the vice-presidents, Dr. A. G. Miller, Dr. James Ritchie, Dr. A. H. F. Barbour, Dr. J. W. Ballantyne, Emeritus Professor A. Crum Brown, and Dr. G. Keppie Paterson. The treasurer is Dr. R. A. Fleming, and the secretary Dr. H. F. Lechmere Taylor, 56, George Square, Edinburgh.

Medical Notes in Parliament.

The Ministry of Health Bill.

THE HOSPITALS CLAUSE.

A LARGE amount of attention has naturally been drawn to the meeting of Peers and Commoners held last week to consider the hospitals clause of the Ministry of Health (Miscellaneous Provisions) Bill. The gathering was private, but the chairman (Colonel F. B. Mildmay, M.P.) was empowered to convey in a letter to the Prime Minister and to Dr. Addison the views expressed. Having regard to the importance of the matter, we give the text of the communication:

Dear Prime Minister,

A meeting attended by between fifty and sixty members of the two Houses of Parliament concerned with, and interested in, the management of voluntary hospitals in all parts of the country, was held in a Committee Room of the House of Commons on Thursday last, the 18th inst.

Amongst those present were:

The Duke of Portland, the Earl of Athlone, Earl Cromer, the Earl of Arran, Viscount Hambleden, Earl Winterton, Lord Islington, Lord Dawson, Viscount Duncannon, M.P., the Hon. W. Ormsby-Gore, M.P., Sir Philip Magnus, M.P., General Davidson, M.P., Sir Samuel Scott, M.P., Sir Robert Newman, M.P., Sir A. Hunter-Weston, M.P., Sir Beville Stanier, M.P., Sir Henry Craik, M.P., Viscountess Astor, M.P., Sir John Butcher, M.P., Sir Godfrey Collins, M.P., Mr. Evelyn Cecil, M.P., Mr. Betterton, M.P., Mr. Atkey, M.P., Mr. Glynn, M.P., Colonel C. R. Burn, M.P., Lieut.-Colonel F. E. Fremantle, M.P., and Colonel F. B. Mildmay, M.P.

The following resolution was passed, and as chairman, I was requested to convey the same to the Minister of Health and to the Prime Minister:

> That, before any legislation is passed on the subject of State or rate aid for voluntary hospitals, an immediate inquiry into the whole subject should be held by an impartial committee, and that such committee should report at the earliest possible moment.

In conveying to you this resolution, I am particularly anxious to make it absolutely clear that those whom I am representing are very anxious not to retard legislative action in connexion with the future of voluntary hospitals. It is most certainly in no spirit of obstruction that they press upon you the terms of this resolution; for, being themselves, as regards most of them, members of managing Boards of various hospitals, and therefore familiar with the straits to which some of these have been reduced, they recognize that legislative reconsideration of the whole subject will not brook delay.

While, however, fully conscious of the responsibility possibly attributable to them for any such delay, however short—and, in their view, this delay should not measure more than a month or two—they desire me to urge upon you that it is quite impossible to deal comprehensively and satisfactorily with so big a question as the future of voluntary hospitals in a single clause of an omnibus bill of twenty-six clauses, which concerns itself with matters so diverse as housing, local finance, inspection of aliens, mortuaries, sale of food and drugs, loans, expiring laws continuance, powers of trustees, purchase and appropriation of land, composition of borough councils, etc. Moreover, they contend that the proposed 11th (Hospital) clause does not go to the root of the matter, which is but superficially dealt with by the permissive provisions.

The position is complicated by the fact that the circumstances of the various hospitals differ so widely as regards pecuniary resources, endowments, and the wealth of the particular district served by the hospital. It is difficult, admittedly, to legislate for these greatly varying requirements. No time has been afforded for gathering and co-ordinating the considered opinions, founded on long experience, of medical authorities, of hospital boards, of hospital staffs, and of others whose views would be valuable. A sound and lasting solution can result only if such opinion is available, and be the foundation for your legislative action.

We learn that, realizing this, and with a view to the tabulation of such expert opinion, the London Committee of the British Hospitals Association has determined to call to counsel, during the first week of December, representatives of the private hospitals, so that in the conclusions of this body, thus adequately augmented, the Government will find a reliable basis, provided by those most experienced in hospital management, for sound legislation.

It is, however, to be remembered that as, according to the present intentions of the Government, consideration in detail of the provisions of this bill by the Standing Committee will proceed *de die in diem*, the Committee stage, involving discussion of the details of the bill, will be over before the conclusions of the British Hospitals Association are available. Under those circumstances those whom I am authorized to represent are anxious that the Government, at this Committee stage, should view with favour the amendment to postpone the consideration of Clause 11, or preferably the amendment to provide for the omission of this clause from the bill, pending the consideration of the whole question by an impartial committee to be appointed by the Government. As to the composition of such a committee, they venture to suggest that its members should be quite few in number, and that in the light of recent experience in connexion with important committees of inquiry they should be absolutely impartial. Medical authorities, however eminent, and representatives of particular hospitals should not be included, while the valuable evidence to be furnished by these should be subjected to attentive and exhaustive examination by the committee.

There remains one consideration. Need the dropping of Clause 11 and the setting up of such a committee mean considerable delay? We who know the position, and who dread delay, strongly assert that no such consequence is necessarily to be feared. All the requisite evidence is to hand, for it has been already tabulated by the various hospitals; the sittings of the committee of inquiry, if it be appointed forthwith, need not be protracted, so that not more than a month or two's delay to legislation need be contemplated.

It may be urged that while some London hospitals confidently hope to surmount their difficulties without recourse to public funds, the pecuniary position of some hospitals is immediately critical; but there is good reason to believe that, however critical the emergency, there are funds available which will enable such hospitals to tide over the month or two which must elapse before the situation is dealt with. Granted that the position of these can be temporarily alleviated the short delay is justifiable, provided that it means a more sound and well-considered solution.

I will not discuss at length the particular attempt to solve the difficulty provided by Clause 11. It suffices to say that, if responsibility for the upkeep of hospitals is thrown upon the ratepayers as therein contemplated, we shall see, as a result, an enlightened and progressive policy of hospital development on the part of some local councils, while others, perhaps adjoining them, will refuse any expenditure, will arrest any activities in this direction. Co-ordination of hospital efforts throughout all England would seem to be a first requirement, and, to that end, direction from a central body.

You will not have lost sight of the fact that, by universal admission, there is a general outcry from all localities against the continually increasing pecuniary obligations laid upon the rates, and which are being forced upon local governing authorities by recurring legislative enactments—expenditure over which the ratepayers have no real control. The spirit of the revolt thus engendered locally against expenditure of the nature foreshadowed by Clause 11 does not augur well for its success as a solution of the difficulties which are besetting hospitals. If it should ultimately appear that aid from public funds to the hospitals in some form or other is indispensable, it was strongly felt by those on behalf of whom I speak that such public funds should be made available in return for particular services ungrudgingly rendered in the past by hospitals to the State—for research work, for services in connexion with health insurance, in connexion with venereal diseases, etc., public money being thus paid for public service. But I do not wish to be drawn into an examination of possible alternatives to the provisions in the clause. I wish only to press for the establishment immediately of a committee of inquiry, and for the corollary the exclusion of Clause 11 from your bill, while ever pressing upon your notice at the same time the keen anxiety of those I represent that legislative action should not be materially delayed on any account.

The second copy of the above letter (addressed to Dr. Addison) was presented by Colonel Mildmay in an interview. The Minister of Health, in reply, promised to give it every consideration.

Amendment Proposals in Committee.

Meanwhile the bill is being taken in Grand Committee. The earlier clauses are concerned with housing, and progress with them has been slow. As regards Clause 11 (of which the full text was printed in the JOURNAL of November 13th, p. 758) members of the Committee are bound to assume that Dr. Addison intends to proceed with it, and a large number of amendments have been tabled.

Before receiving the letter from Colonel Mildmay, Dr. Addison himself had put down a number of amendments—some of them to redeem pledges he had given since the introduction of the bill and others to clarify the phrasing. At the beginning of the first section, which lays down that "the council of a county shall have power," Dr. Addison proposes to add "on such terms and conditions as may be approved by the Minister." As the bill was introduced Subsection (*a*) went on to lay down that the power should be "to supply and maintain hospitals." Dr. Addison now proposes that the power shall be:

> to acquire by agreement with any Poor Law authority, any Poor Law hospital or infirmary belonging to that authority within their area and maintain the same as a hospital,

Consequentially he asks the Committee to omit from the clause Subsection (*c*), which set forth that one of the objects shall be for county councils

> to undertake the maintenance of any Poor Law hospitals or infirmaries within their area.

Other consequential amendments are also omitted.

As regards Section 4, which lays down that the expenses of a council shall be defrayed, in the case of a county council, as expenses for general county purposes, Dr. Addison proposes to add that, if the Minister so directs, the expenses may alternatively be charged on such part of a county as is provided for under an order.

The notices of amendment by private members include one put down by both Mr. Ormsby-Gore and Earl Winterton for postponing Clause 11, and others by various members for omitting different sections. Mr. Ormsby-Gore presents a series

of amendments which need to be read together to be understood. He would exclude the London County Council from power to act under the provisions of the bill, and he would place the powers in the hands of county boroughs instead of county councils. Instead of giving such authority power to undertake the maintenance of any Poor Law hospitals or infirmaries within their area, he would allow them

to make agreements with boards of guardians providing for the reception, maintenance, and treatment in Poor Law hospitals or infirmaries of any class of sick persons for whom the council is empowered by law to provide indoor maintenance and treatment.

Alternatively, failing acceptance of this amendment, he proposes that the councils should have power to contribute to the maintenance of Poor Law infirmaries instead of being given the power to maintain them contemplated under the clause. This proposal he submits, subject to qualification—

that in any hospital or infirmary previously provided by the Poor Law guardians the council shall set apart for the use of the board of guardians concerned a sufficient number of beds to be maintained by the board of guardians for the treatment of necessitous poor, such number to be not less than that required for this purpose by the board of guardians on March 1st, 1920.

Mr. Ormsby-Gore has also down another amendment to make the whole arrangement with boards of guardians a matter of agreement such as might be approved by the Minister after a local inquiry has been held.

Several members propose that the power for dealing with Poor Law hospitals should not be vested in county councils, but in county boroughs, boroughs, urban or rural districts. Mr. Rupert Gwynne would give the local authority the right to contribute without reference to the Minister. Colonel Lambert Ward would allow the Poor Law hospitals to be used both for paying and non-paying patients.

Dr. Fremantle would enlarge the proposed right of authorities to contribute so that the contribution might be made to institutions either within or without their areas. The clause would permit of contributions being made only to institutions within a council's area. Dr. Raw would limit the contribution by a council to a sum not exceeding a penny rate in any one year.

Lieutenant Commander Kenworthy would add a provision that Poor Law officers whose offices are abolished or reduced under the clause should receive reasonable compensation.

Mr. Ormsby-Gore proposes the following clauses.

Where it appears to a board of guardians that there is any hospital or infirmary belonging to the guardians accommodation for the sick in excess of the accommodation necessary for the due administration of the Poor Laws in the union or unions for whose sick poor such hospital or infirmary is for the time being utilized, it shall be lawful for the guardians to utilize such excess accommodation for the reception, maintenance, and treatment of persons other than the sick poor.

Notwithstanding anything to the contrary in any Act of Parliament it shall be lawful for the Treasury, with the approval of the Minister of Health, to make such grant as in their opinion may be considered adequate to any voluntary hospital which undertakes the work of education of medical students and nurses, or which undertakes any research work at the instance of or with the approval of the Minister of Health, equivalent to the cost incurred by the hospital in carrying on such education or research.

Suggested New Clauses.

The most remarkable of all the amendments are a number of new clauses submitted by private members in reference to a variety of subjects. Ordinarily the title of a bill restricts the initiative of private members in their desire to secure legislation in this way. But the "omnibus" title of this measure leaves great possibilities, and it remains to be seen how the Chairman of the Committee may regard these notices.

Mr. Tom Myers has down a clause to strengthen the position of officers of local authorities as to increases of remuneration authorized but not yet granted. Dr. Fremantle proposes that a medical officer of health or inspector of nuisances shall be removable by the authority with the consent of the Minister of Health, but not otherwise. Mr. Robert Richardson submits that the representation of the M.O.H. to a local authority shall be binding on the local authority for the closing of a dwelling house deemed by him to be dangerous or injurious to health—this to be subject to appeal to the Minister.

Mr. Swan proposes—

(1) That medical officers of health for country districts shall be removable by district councils only by the consent of the Minister of Health; (2) that the medical officer of health for a country district shall be paid such salary as the Minister may determine, the salary to include any travelling or clerical expenses the Minister deems necessary; (3) that such medical officers appointed, or reappointed after the passing of this measure, shall not be appointed or reappointed for a limited period only, save under exceptional circumstances indicated, and (4) that such medical officers shall not without the express consent of the Minister engage in private practice or hold any other appointment.

For the purposes of this section Mr. Swan would make all existing agreements void. Mr. Swan further proposes that the periodical report of a M.O.H. shall be printed by the local authority without unnecessary delay and without any addition, omission, or other alteration.

Mr. Robertson has given notice of a new clause to carry the following provisions relating to the treatment of venereal diseases:

(1) If any person, not being a qualified medical practitioner—(*a*) treats or attempts to treat, for reward direct or indirect, another person for venereal disease; or (*b*) offers to treat others for reward for venereal disease; or (*c*) prescribes or offers to prescribe for reward, any remedy for venereal disease, he shall be guilty of a misdemeanour.

(2) If any person, whether a qualified medical practitioner or not, by any advertisement—(*a*) treats or attempts to treat, or offers to treat or procure the treatment of, any person for venereal disease; or (*b*) prescribes or offers to prescribe any remedy for venereal disease; or (*c*) recommends, or attempts or offers to recommend, any drug, matter, or thing for the prevention, cure, or relief of venereal disease, he shall be guilty of a misdemeanour.

(3) Where in any proceedings under subsection (1) it is shown that a person, not being a qualified medical practitioner, has treated or attempted to treat another for venereal disease, or has offered to treat others, or has prescribed or offered to prescribe a remedy for venereal disease, whether in any particular case or generally, he shall be deemed to have done so for reward, unless he shall satisfy the court that he did not do so.

(4) Any person guilty of a misdemeanour under this section shall be liable (*a*) upon conviction on indictment to be imprisoned, with or without hard labour, up to two years, or to a fine up to £500, or to both; or (*b*) upon summary conviction to be imprisoned, with or without hard labour, up to six months, or to a fine up to £100, or to both.

(5) Nothing in this section shall apply to an advertisement by a local or public authority; or an advertisement sanctioned by the Minister of Health; or any advertisement bona fide intended for the information of qualified medical practitioners or wholesale or retail chemists only, and relating to their lawful practice or business only.

(6) In this section "venereal disease" means syphilis, gonorrhœa, or soft chancre; and "advertisement" includes any notice or announcement, whether oral or written, and any handbill, label, or enclosure, and any other communication in the nature of an advertisement.

The Unionist Reconstruction Committee, at a meeting held on November 22nd, passed a resolution asking the Government to withdraw all clauses in the bill beyond Clause 5, and urging that, before any further legislation dealing with voluntary hospitals is introduced, an independent committee should be appointed to inquire and report on the subject at the earliest possible moment.

Poor Law Hospitals and Infirmaries.—At the instance of Mr. Ormsby-Gore, Dr. Addison has given the following information as to Poor Law hospitals and infirmaries:

No. of Beds in Poor Law Institutions of Various Kinds on January 1st, 1920, according to Returns Supplied by the Clerks to the Guardians.

Separate infirmaries	35,261
Separate institutions for defectives and other special classes	3,368
Separate institutions for children	34,673
Other Poor Law institutions	204,995

Included in the above figures are 1,644 beds in children's institutions and 54,090 in "other Poor Law institutions" set apart for the sick. In a certain number of cases beds were on the date of the return still in the hands of the military authorities, and have generally been excluded by the clerks in their statements. The total number of unoccupied beds was, approximately, on March 1st, 107,000, and on September 1st, 112,000. Dr. Addison states that he has not consulted the Association of Poor Law Unions regarding the proposed transfer of hospitals to the County Council, under Clause 11 of the Ministry of Health Bill.

Position of the London Hospital.—Sir F. Hall asked, on November 18th, whether the attention of the Minister of Health had been called to the report that the London Hospital might have to close some of its wards owing to lack of funds; if in the absence of hospital service, supported mainly by voluntary contributions, the charge on the National Exchequer for medical and surgical attendance under the National Insurance Act would be greatly increased; and if the Government had under consideration any proposal to give financial support to the London and other hospitals. Dr. Addison replied he was aware of the statement referred to, and he hoped that the National Relief Fund would have regard to the special difficulties of the London Hospital in distributing their grant of £700,000 towards defraying the war deficit of the voluntary hospitals of the United Kingdom. He was most anxious to preserve the voluntary system and Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill was put forward with a view of meeting the present urgent necessity.

Epidemics in London.—In reply to Mr. Lyle, on November 18th, Dr. Addison said that scarlet fever and diphtheria had been exceptionally prevalent in London this autumn; but both diseases were of an extremely mild type and the death rate in each case was far below that experienced in previous epidemics. There was no evidence of the existence of epidemic influenza in this country at the present time. The origin of these waves of zymotic disease was obscure. Similar, although more fatal, outbreaks occurred in 1892 and 1893. He was glad to say that the existing machinery and the available hospital accommodation had proved equal to the task of coping with the present outbreaks.

Concurrent Treatment and Training.—Major Tryon, in reply to Mr. A. M. Samuel, stated that at the end of last month some two thousand ex-service men had been recommended by medical referees for admission to convalescent centres for concurrent treatment and training. Arrangements were now in progress for providing substantial additions to the existing accommodation, and a first instalment of 300 places would be available in the course of a few weeks.

INDUSTRIAL HOSPITALS.

BY

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PHYSICIAN, SKIN DEPARTMENT, HOUSE GOVERNOR,
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THE character of the British hospital of the future will be largely determined by the first steps taken to make use of the hospital beds at present vacant in Poor Law institutions. That use must be made of these beds, or a portion of them, almost at once is generally agreed. Patients cannot much longer be allowed to lie untreated in their homes, often within a stone's throw of admirable hospital accommodation.

At first sight the problem would appear to be one as easy of solution as was that which confronted the country on the outbreak of war. Buildings were then commandeered, staffs appointed, and in a surprisingly short time hospitals for the treatment of sick and wounded soldiers established in every town. Indeed, the problem might be thought to be an easier one, since suitable buildings are now standing ready for use, while the number of sick to be dealt with is perhaps as one to ten, or even to twenty. The difference, however, between these two problems is fundamental. In warfare cost cannot be counted—victory is everything — but victory once gained there follows a period of financial sickness. At this moment the country is financially sick and the limit of bearable taxation has been reached. Cost is therefore one of the controlling factors in the prob'em of how to make use of the Poor Law accommodation.

Again, warfare breaks only for the period of hostilities the ingrained habits of peace. It may alter, it may develop institutions, but if those institutions are in consonance with the genius of the people and are grounded in their affections, then warfare need not destroy. There are no institutions more typical of our race, more firmly established in the affections of the great mass of our people, than the voluntary hospitals. Any step taken that would tend to injure permanently their usefulness could result only in taking from us something we really like and giving us something we do not really want.

Cost and the voluntary hospital, therefore, cannot be left out of consideration in solving our problem. They are the two main controlling factors. Keeping, then, in view that we have patients to be treated, that we have accommodation for the purpose, that cost is of paramount importance, and that the voluntary hospitals must be preserved, we propose to examine the suggestion that the Poor Law hospitals should be utilized without delay as general hospitals.

Before doing so, however, we think it desirable to consider shortly certain aspects of the voluntary hospitals—their patients and their sources of support. A patient in a voluntary hospital pays nothing for his treatment; he may contribute towards the cost if he wishes; there is, in the main, no compulsion, nothing of the nature of a tax. It is true that a gradual change is taking place; but, in order not to confuse the issue, it is better to regard him as a patient who costs the State nothing and who contributes, if he does contribute, of his own free will. It is true also of the untreated patient, whether his name appears on the waiting list of a general hospital or not, that he expects if he secures admission to have nothing to pay. Now, a large number of these are industrial patients, some wholly incapacitated by accident or disease, some able to follow their employment intermittently, some able to work continually but requiring treatment of one form or another to render them capable of full effort. What the volume of these may be it is difficult to assume. Probably we are not far out in regarding one-third of the patients in a general hospital, and a rather larger proportion of those on the waiting list, as industrial. For the purpose we have in view we limit the term industrial to those patients who can be definitely associated with some organization economically interested in their speedy return to work. At the present time the voluntary hospitals have difficulty in finding money to carry on. In their search for support they are being compelled to modify their purely charitable constitution. In taking stock of their situation they have found that they are being made use of by a large number of patients able to contribute materially towards the cost of treatment. They find also that prosperous mining companies, large insurance organizations, city corporations, and employers of labour generally rely upon them to treat their sick and injured. One of the most striking instances of this is to be seen in the attitude of city corporations towards the hospitals within their boundaries. Street accidents have always been received and treated without delay. Now it is taken as a matter of course that the voluntary hospitals should provide instant and efficient treatment for all injured in fires, in railway disasters, in collisions in the street, in brawls, in riots, by acts of violence and of crime. It is expected that charity should do this work free of cost. The knowledge gained by this stock-taking has opened the eyes of the committees of the voluntary hospitals to the fact that they are being taken advantage of; that there is an attempt to place on the shoulders of charity a burden charity was never meant to bear—a burden which it can no longer bear. In certain districts realization of this fact has resulted in a very considerable increase in support derived both from workmen themselves and from their employers. But this support is still quasi-voluntary. City corporations, speaking generally, do little in this direction; insurance companies do nothing at all.

Now there are three methods by which money can be raised, and three only:

(A) By voluntary gifts.
(B) By taxation, governmental or local.
(C) By payment (on the basis of work done) from employers, employees, private persons.

So far as the last method is concerned it is immaterial whether payment is made direct or through some form of insurance so long as the insurance does not take the form of State insurance, in which case it becomes in part, or in whole, a form of taxation, and should be considered as such.

If we examine the income account of a voluntary hospital—we take the one with which we are most intimately acquainted—we find it can be divided up roughly as follows:

(1) Voluntary gifts	£21,000
(2) Taxation, partly governmental, partly local	7,000
(3) Employers, employees, patients, students ...	35,000
Total	£63,000

Note.—We have left out of consideration payments made for the treatment of soldiers and pensioners.

With regard to (1) there is no need to comment further than to say that it is made up of annual subscriptions, donations, voluntary collections of various kinds, and amounts to one-third of the total.

In this particular instance the sum under (2) happens to be almost entirely for the treatment of venereal diseases, and as such differs in a certain sense from taxation for general hospital purposes. The taxation is for the purpose of providing a protection against a real and terrible danger and is comparable to taxation levied, say, for police purposes. In any case it affects neither favourably nor adversely the principle of voluntary contributions. The work for which it is paid is one which does not engage the sympathies of the public. The voluntary hospital undertakes the task because it may be in a position to do it better and less expensively than any other organization, and it is also of scientific interest. In other hospitals the amount raised under the heading taxation may bear a rather higher proportion than one-ninth of the total, but it is probable that in none of the large ones does it amount to as much as one-seventh.

Division (3) is the important one — it is five-ninths of the total. It is hardly possible to regard it yet as coming wholly under the heading, "payment on the basis of work done." The employers' contributions are still tinged with the idea of charity. Some of them may be wholly charitable, as, for instance, in the case of an employer of labour making a grant in excess of the cost of treatment of patients coming from his works. Again, many such contributions, even when they in no way cover the cost of treatment, are regarded by the employer as purely charitable because he has not yet realized that the restoration of his workmen to health at the earliest possible moment saves his pocket. In essence, however, they are contributions in return for which something is given,

whether the gift is realized or not, and as such a payment pure and simple under the heading (C).

The contributions from employees resemble those from employers in the main. Ostensibly they are a voluntary levy for the purpose of helping the unfortunate; in reality they have come to be subscriptions, more or less inadequate, to a benefit club. The contributors expect to receive treatment should they fall ill. These contributions have not yet by any means reached the stage of bearing a definite relationship to the cost of work done, but they are tending to do so in certain districts, and appeals made to bodies of workmen now show the number and cost of treatment of patients coming from their works or from their area.

Such are the sources of income of the voluntary hospitals. From what has been said it will be seen that we have hospitals still bearing the name "voluntary," still enjoying the confidence and affection of the people because of that name and of the spirit that animates them, and yet drawing only one-third of their support from truly voluntary sources. It cannot, then, be contended that to retain the voluntary spirit it is necessary to trust wholly to charitable sources of support. The conclusion we draw, therefore, is that, as in the great voluntary hospitals a large proportion of the support is given on the basis of work done, so, if there is to be no destructive rivalry between voluntary effort and the State, it is to this source of support that the Poor Law must first look for money; if, that is, we are prepared to admit, as we must admit, that to attempt to run two classes of hospitals—the voluntary and the Poor Law, the latter being supported entirely out of funds derived from taxation—will inevitably result in the disappearance of the former.

It will be agreed that the most urgent need of the country at the moment is the re-establishment of industry. Obviously, then, we should turn our attention first to that part of hospital treatment that tends to make the industrial worker a more efficient workman. As we have already said, a large proportion of patients in hospitals are engaged in industry. In many cases they are patients because of their work. In others they are a clog on industry because, through ill health, they are industrially inefficient. Any step taken, then, to cure them must benefit industry as a whole. If, then, the Poor Law accommodation is first used for this purpose it will be helping directly towards providing the necessary money for wider and more ambitious schemes of health. Only a country industrially prosperous can afford elaborate health schemes.

Suppose we set apart in the Poor Law hospitals sufficient accommodation to deal with the general hospital industrial patients we shall relieve the pressure on the voluntary hospital and treat those on their waiting lists who, while not medically or surgically urgent in the hospital sense, are yet industrially urgent. By doing so we may be laying the foundation of great industrial hospitals. Let us take a sample case, that of a large industrial area served by two comparatively large voluntary hospitals, one of which has a medical school, and by several Poor Law institutions with accommodation suitable for general hospital purposes. Each of the voluntary hospitals deals with a large number of industrial patients and each has a waiting list on which are the names of many more. Consideration of the list of one hospital alone shows roughly a total of 1,500 suppliants for admission. Of these, over 400 await operation for hernia, and 150 for conditions such as haemorrhoids. The majority of these are workers. Three weeks, on the average, in hospital, followed by a brief holiday, would return them to the ranks as efficient workmen. In this area we have reason to believe that 200 beds would not only treat the industrial waiting list patients but would treat also at least a third of the industrial patients at present in the wards of the voluntary hospitals. The relief thus given would enable voluntary hospitals to admit many of the non-industrial patients at present on their waiting lists. Such accommodation could readily be found in one of the Poor Law hospitals. We do not suggest that 200 beds would satisfy the present hospital situation, but we do suggest that it would deal with a definite class of hospital patients the responsibility for the treatment of which may fairly be laid on shoulders other than those of the State.

Let us look at this from another point of view. On the waiting list of a voluntary hospital is the name of a miner suffering from a complaint which incapacitates him from hewing coal. There his name may remain for weeks, months, in certain cases for more than a year. Is it conceivable that in these days when output means so much the mine managers will allow such a man to remain one day longer untreated when they know that for £10 they can, in three weeks' time, have his disability removed? Four months' absence from work and on the waiting list means the loss of the labour which hews nearly 100 tons of coal. The matter may be looked at from many other points of view. For example, the value of this man as indicated by his wages—the economic balance is still in favour of immediate treatment; or, again, from the compensation point of view (if a compensation case), treatment beats compensation in the financial contest. We present this case to the employer, not as a lesson in ethics, but as a lesson in his own sphere—economics. The lesson is true whatever the length of the unnecessary waiting may be. It is only a matter of degree. The lesson is equally true in principle in the case of the intermittent worker, or in the case of a constant but inefficient worker—inefficient through ill health.

We lay no stress whatever on an estimate of beds required for an area. There are no completely reliable figures, but if more beds are required, then there are more beds to be had. We do suggest, however, that a comparatively small number of beds will relieve the present pressure in a very remarkable way. We submit that this industrial line is the easiest and the least controversial method of initiating the Poor Law institutions in their new rôle of general hospitals.

So far, then, we have accommodation; we have suggested the class of patients to be admitted, and we have suggested a source from which money may be expected. We do not suggest that the whole cost should come out of the pockets of the employers; on the contrary, we are of opinion that it is of the utmost value in the building up of character that the workmen should themselves contribute towards their own cure. Evidence is not wanting that the workers are willing to contribute pound for pound with their employers to such an end. There are many employees, too, who feel that they have neither the desire nor the right to claim either full or partial assistance from their employers, and who are ready—nay, anxious—to find such a sum as £10 if only they might be restored to full working capacity thereby. The lines upon which this can be done are given us in the example of the voluntary hospital mentioned above, the only difference being that in the industrial beds payment would be guaranteed *before* admission.

There remains now staff and method of control. We suggest that at first there should be close co-operation between the industrial hospital and the voluntary, that members of the staff of the voluntary hospital should give part of their services to the industrial. In every large voluntary hospital there are assistant surgeons and surgical registrars who are either fully trained in work of this character, or who in their training are daily in the closest touch with those who set the standard of surgical work in the district. It is important that the industrial hospitals should secure the confidence of the workmen and of their employers from the outset. This confidence can most easily be gained by employing members of voluntary hospital staffs to do the work. As time goes on the industrial hospital will no doubt grow more and more independent, but even when fully established there is everything to be gained by friendly ties with the voluntary hospitals and the medical schools.

For an industrial hospital of 200 beds a staff of four-part-time surgeons, two resident medical officers, and occasional specialist assistance is all that is necessary. Such a staff could deal with the operative work of such a hospital, in which the length of stay would average three weeks. Assuming the ordinary rate of occupation, there would be about 60 admissions per week, and if these were all patients requiring operation and each of the four surgeons gave two days a week, the daily list would not be beyond their powers.

The services of these officers would have to be remunerated. Assuming that the cost per patient in an industrial hospital is as much as the cost in the voluntary hospitals—namely, £10—the addition of 20s. to this amount would provide a sum, on a turnover of 3,000 patients per year, more than sufficient to pay each a salary of £500; the addition of 40s. would pay £1,000 each.

As a matter of fact, it is probable that the cost per patient in the industrial would be less than in the voluntary hospital, and that the figure £10 would be sufficient

to cover the cost of payment of staff on the smaller scale. The industrial hospital would escape many charges which the voluntary, due to its elaborate departments and equipment, has to meet.

We have seen the suggestion that the Poor Law hospitals should be handed over to voluntary committees. It is difficult to imagine any practicable method of attaining this end. We submit, however, that it might be possible in each area to create an industrial body which, while in no way assuming the functions of administrative control, might yet be expected to interest itself in matters of vital importance to the well-being of the worker. It is in every way to be desired that both employers of labour and their workmen should realize that output and efficiency depend as much upon health as they do upon accurate bookkeeping, accurate costing, energetic salesmanship, and the like. An Area Committee representative of employers, workmen, chambers of commerce, insurance companies, and so on, specially charged with the survey of the means of treatment of the industrial sick and disabled within their area, might serve a useful function without in any way interfering with any organization which already exists or which it may be in the mind of the Ministry of Health to establish for the control of the Poor Law hospitals.

If it be asked how are the beds to be acquired, the answer is clear. They cannot be claimed or compelled, but if the Poor Law Guardians offer the beds, they can be used provisionally. So long as there remain, or are elsewhere provided, sufficient beds to satisfy the demands of the sick poor, the guardians may, if they will, utilize those vacant in the manner indicated. We are well aware that in certain districts already Poor Law beds have been offered and accepted for the purpose of relieving pressure on the voluntary hospital with gratifying results. The practical difficulties encountered in coming to a working arrangement have been:

1. The selection of the class of patient to be treated.
2. The awkwardness of treating the same type of patient on different terms in the voluntary hospital and in the Poor Law beds.

Both these difficulties appear to be surmounted by the scheme outlined.

Admission and discharge to hospital would be through the medical superintendent, just as through the resident medical officer in many large hospitals. Since the medical superintendent must be held by the guardians to be responsible, he would be nominally supervisor of the whole staff and its work. Given goodwill and tact, there is no reason why such arrangements should not speedily and successfully be entered into.

By way of summary, we submit that the proposition advanced offers an immediate partial solution of hospital difficulties, a solution which does not injure existing voluntary institutions or prejudice the proper development of larger schemes of utilizing Poor Law beds. It predicates the establishment of industrial wards, or even industrial hospitals, to deal with (1) workers incapacitated by industry; (2) workers unable through curable disabilities to do full work. Its adoption would be of profound economic advantage by clearing the waiting lists of industrial patients, and would open up the transition of the Poor Law beds to general hospital uses—

(*a*) Without cost to rates or taxes.
(*b*) With the co-operation of employers and employed.
(*c*) Without arousing opposition from the voluntary hospitals.

It demands beds relatively few in comparison with the number actually vacant. It could be carried on equally well by the present Poor Law authorities, or by other local authorities to whom the beds or institutions might be temporarily or permanently transferred.

Finally, no stigma can attach to any patient who pays for what he gets; and no adverse criticism can be sustained against treatment carried out by a staff substantially the same as that of the voluntary hospital.

OWING to the impossibility of obtaining foreign literature, the publication of the *Zentralblatt für Physiologie* will be suspended at the end of the current year.

THE CARE OF PHYSICALLY DEFECTIVE CHILDREN.

A JOINT conference of the Invalid Children's Aid Association and the Central Committee for the Care of Cripples was opened on November 16th at the Guildhall. Sir WILLIAM BENNETT, chairman of the Invalid Children's Aid Association, presided at the morning session, and in the absence of the President of the Board of Education, the opening address was delivered by Mr. J. HERBERT LEWIS, M.P., Parliamentary Secretary to the Board.

Mr. Lewis expressed the sense of the community's gratitude for the work done by the voluntary associations for child welfare, especially in the linking together of local educational authorities and hospitals for the purpose of securing treatment for those needing it. Lest the children, when cured of their physical ailments, should find themselves without the intellectual equipment necessary to maintain themselves, it was essential, he said, that education should go hand-in-hand with remedial treatment. During the past twenty years 123 day schools, accommodating 9,000 of these children, and 12 residential schools, providing for 540, had been established. Early recognition and early treatment of these cases were dependent on information supplied by health visitors, infant welfare centres, voluntary associations, hospitals, and general practitioners. A large increase would be required in the numbers of orthopaedic surgeons, nurses, and teachers available for prevention and treatment of crippling ailments. With proper treatment 75 per cent. of child cripples could be turned into satisfactory workers; money thus expended was a sound investment.

Mrs. TOWNSEND, of the Invalid Children's Aid Association, urged the need of combination and co-ordination in the work of the State, the local authorities, and the voluntary agencies. The Association had thirty-six affiliated societies, and the children dealt with annually by it had increased from 584 in 1888 to over 33,000 during 1919. There was still need for much greater provision of residential accommodation and educational facilities for invalid children. The conference adopted a resolution that:

> The time has come when a national inquiry should be made into the nature and extent of crippling among children, with a view to its prevention and remedial treatment.

At the evening session, at which Sir ARTHUR STANLEY presided, Dr. JAMES WHEATLEY described the orthopaedic scheme in operation in Shropshire:

The scheme consisted of three parts—the hospital itself, arrangements for after-care, and a body of health visitors. The equipment of such a hospital was expensive, and therefore the establishment should not be too small; a hospital of from 200 to 250 beds seemed to be the ideal. For the purposes of after-care fourteen centres had been started in the country, and these centres were also used as places where preliminary examinations could take place before admission to hospital. The most important consideration of all was the organization of an efficient body of health visitors, upon whom it depended whether orthopaedic cases were taken up in the early stages when they could be readily cured.

On the motion of Dr. FRASER, deputy medical officer for Cumberland, a resolution was passed expressing the opinion:

> That the age at which grants are available for the treatment of cripples should be extended to the maximum age for continuation classes under the Education Act, 1918.

Sir ROBERT JONES, Chairman of the Central Committee for the Care of Cripples, presided at the morning session held on November 17th. Mr. H. S. PLATT, in the course of a paper describing the work done in America, said that few general hospitals in that country were without a special department for the treatment of crippled children; the work, as a general rule, was still founded on the co-operation of voluntary organizations. Dr. J. ANDERSON SMITH described the treatment of heart cases at the Edgar Lee Home.

At the evening sitting, at which Sir NAPIER BURNETT, presided, Sir ROBERT JONES said that, roughly speaking, half the deformities were due to tuberculosis and rickets, and the rest were congenital or due to poliomyelitis, but there was hardly a crippled child, however distorted, who could not be improved sufficiently to make him a valuable industrial asset. In most of the deformities of children there was a stage when, to the uninitiated, recovery seemed complete and all parental anxiety was allayed; this was often the most critical moment in treatment, and was a period which should be provided for in any Government scheme. From his observation of the results achieved in various hospitals, Sir Robert Jones

had no hesitation in saying that those children who were in the open air day and night were at a great advantage. A sketch was given of the essential elements of a national scheme, consisting of a central co-ordinating body working with the Ministry of Health and the Board of Education; local committees for the care of cripples in every district; and hospital schools, working in touch with which should be out-patient clinics, as well as day and residential schools for invalids. Whatever the cost, the investment would be a sound financial proposition which would pay interest a hundredfold.

England and Wales.

APPEAL OF THE UNIVERSITY OF BIRMINGHAM.

THE University of Birmingham, established in 1900, mainly through the exertions of the late Mr. Joseph Chamberlain, is making an appeal for a capital sum of £500,000. The justification offered is similar to that put forward by other universities which are making appeals, but Birmingham is in the unfortunate position of having incurred a capital debt of £130,000, the interest and the sinking fund of which amount to more than £8,000 a year. The appeal is founded partly on the need for better remuneration of teachers and partly on the need for extension. The efficiency of a university, it is pointed out, depends on the efficiency of its teaching staff, but owing to the poverty of the University of Birmingham the stipends, particularly of the non-professorial staffs, are miserably low and quite inadequate to attract and remunerate the ability required. The loyalty of the staff has been remarkable, but a university has no right to exploit that loyalty. The most urgent and crying need of the university is, it is said, to pay its professors and their assistants stipends commensurate with their qualifications, with the services they render to the community, and with the enormous rise in the cost of living. The cost of administration and maintenance has more than doubled owing to the rise in the wages of labour, cost of material and apparatus, of repairs, and of the administrative and clerical staffs. The university has, to its great regret, raised students' fees by 25 per cent., but, as in other British universities, students' fees do not pay much more than one-quarter of the expenses. The buildings of the Faculty of Medicine in Edmund Street require extension, and it is essential that the group of biological studies there, which have outgrown their accommodation, should be removed to new and suitable quarters in Edgbaston. Additional chairs are needed in various sciences, including biology, and greater facilities for research. Further, the university is pressed to meet the demands of the industrial workers of the Midlands outside its walls; in recognition of a national duty, it has created a diploma for social studies—that is to say, a training in social and welfare work; but to meet the demands of workers the university must extend especially its art side, strengthening and increasing the staff of that faculty. Another purpose for which money is wanted is for a hostel for men students; the university already possesses a hostel accommodating about seventy women students. Not quite half the amount needed has already been subscribed or promised, but a large part of this is earmarked for special purposes.

THE APPEAL OF THE COLLEGES OF MEDICINE AND SCIENCE IN NEWCASTLE-UPON-TYNE.

The College of Medicine and Armstrong College have joined forces and are unitedly about to appeal to the public for half a million of money. It has for long been felt that if the colleges are adequately to fulfil their function as teaching institutions they must be more liberally supported by the people in the North of England. The need which exists in Newcastle is similar to that which is felt by the British universities generally. At a meeting presided over by the Duke of Northumberland the requirements of the College of Medicine were set forth by its President, Professor David Drummond. There is an annual deficit in the College of Medicine of £2,000 or more, while at the Armstrong College it is upwards of £20,000. The appeal will be for £500,000, and should this be obtained one-fourth of it will be allotted to the College of Medicine. The College of Medicine recognizes the necessity of having a larger number of all-time professors, particularly in the higher subjects, and of the holders of these appointments being adequately remunerated for their services; also, in order to be abreast of the times, the necessity of founding chairs of biological and pathological chemistry, of having research scholarships, additional laboratories, and an extension of the present buildings.

Armstrong College requires money to enable it to pay its professors and lecturers more adequately, also for general equipment and fresh extensions. The college has been for several years a training centre for young professors, but many of them are soon called away by other institutions owing to the higher salaries offered. This is a serious loss to the college.

The appeal has not yet gone forth, but a considerable amount of spade work has been done. Several committees have been formed—for example, canvassing, propaganda, and one for the provision of speakers. It was proposed to hold a pageant, but owing to the late season of the year and the uncertainty of the weather, this, at any rate for the present, has been abandoned. The students of the colleges have taken up the matter and are making the cause their own. On one afternoon last week, after having been addressed by the heads of the colleges, 1,600 of them, male and female, marched in procession through the principal streets of the city to the general post office, where telegrams were forwarded to the students' associations of Birmingham, Leeds, and Sheffield. The students, singing and carrying banners, returned to the Armstrong College in excellent order, nothing but simple fun having been indulged in *en route*.

THE L.C.C. AND THE TUBERCULOSIS BILL.

The London County Council, at its meeting on November 16th, considered the Public Health (Tuberculosis) Bill. The Public Health Committee reported that in its opinion the power proposed to be conferred on the Minister of Health by subclause (1) of clause 1, whereby councils have to make provision to the Minister's satisfaction for the treatment of tuberculosis at sanatoriums and other institutions, was far too wide, as no limit was placed on the requirements which might be imposed by the Minister on the local authority. It was also the view of the Committee that the power of the Minister to withhold Government grant from local authorities who failed to discharge their obligations was sufficient without providing, as in subclause (3), that the Minister might make arrangements for the carrying out of the obligations by some other authority. The Committee recommended that the Council should urge the deletion of this subclause, and, further, that the position of the dispensary service in London should be dealt with specially in the bill, by placing on the borough councils the duty of making dispensary provision, subject to the Council's approval, and, through the Council, the approval of the Minister. The proposal to empower the County Council to appoint co-opted members on the Committee through which its powers in relation to the treatment of tuberculosis would be exercised was deprecated by the Public Health Committee, not because of an objection to the principle of co-option, but because of the inconvenience of having on a standing committee exercising numerous functions certain members whose co-operation would be limited to a single function. The Council endorsed the views of the Public Health Committee, and a general resolution was proposed by Mr. C. H. Norman:

> That the power proposed to be conferred on the Minister to exercise control as regards local administration and expenditure over local authorities in connexion with the making of provision for the treatment of tuberculosis is subversive of the fundamental principles of local self-government.

This was opposed by Dr. Haden Guest and other members of the Labour group, who maintained that local authorities had been deficient in their administration of tuberculosis services, and that the Ministry of Health had perfect justification for assuming drastic powers. After a long debate the resolution was adopted by 64 votes to 7, and a motion to refer the whole matter back was lost by a large majority.

FINANCIAL RESULTS OF THE CARLISLE EXPERIMENT IN LIQUOR CONTROL.

A summary of the accounts recently issued for the year ending March 31st, 1920, shows that the capital involved in the whole area at that date, consisting largely of

accumulated profits, amounted to £916,226, while the total trading profits were £168,115. After providing for the interest on the money supplied by the Exchequer for the purposes of the undertaking and for all other charges, including all taxes and duties—except income tax (Schedule D), excess profits duty and corporation tax—the net surplus accruing to the State for the year was £139,263. This sum gives a return of nearly 16½ per cent. on the average capital employed, in addition to the interest already provided for. From the inception of the scheme up to March 31st last the total surplus which had accrued to the Exchequer was £343,174. After (*a*) meeting all ordinary recurrent expenditure and depreciation; (*b*) defraying the charges for preliminary expenses and the cost of improvements not estimated to add to the realizable value of the properties; and (*c*) paying interest on Exchequer issues and unpaid purchase moneys, upwards of one-half of the average capital cost of the undertaking had been repaid by the date—that is, after allowance is made for the fact that the acquisition of the undertaking as well as the payment for it was gradual.

Scotland.

Edinburgh University Appeal for New Buildings.

An appeal signed by the chancellor of the University of Edinburgh, Mr. A. J. Balfour, and the principal and vice-chancellor, Sir J. Alfred Ewing, K.C.B., and the secretary, has been issued to the graduates and alumni and other friends of the university to help it to obtain the sum of £500,000, which is urgently needed for the erection of new buildings in the departments of medicine, chemistry, and natural history. Not only are the requirements of practical teaching now such as can be properly met only by large addition to the existing laboratories, but the number of students has increased enormously; last session there were 4,634 matriculated students in attendance. Two schemes are in progress; and one has to do with medicine. The university, with the co-operation of the Royal College of Physicians and the Royal College of Surgeons of Edinburgh, has secured a valuable site, now covered by dwelling houses of the poorer class, close to the Royal Infirmary; on this it is intended to erect a group of buildings for the scientific study of medicine, to be called the Lister Institute in memory of the late Lord Lister, whose work in revolutionizing modern surgery was mainly accomplished while he was professor in Edinburgh. The other scheme has already made considerable progress. A site of 115 acres on the south side of Edinburgh was purchased some time ago for university buildings, and on it a school of chemistry, of which the foundation stone was laid by His Majesty the King on July 6th, is being erected, and is now nearing completion. Buildings for zoology and other subjects will follow. These additions are indispensable for the teaching of old subjects under modern conditions, and to enable the university to maintain its position as a national and imperial centre of study and research.

Class Fees in Scottish Universities.

At a meeting of the Edinburgh University Court on November 15th, the Principal, Sir Alfred Ewing, reported that a meeting of representatives appointed by the University Courts of the four Scottish Universities to confer on the question of university fees, held at Perth, unanimously favoured increasing all tuition fees by 50 per cent. in the Faculties of Arts and Science, 33⅓ per cent. in the Faculties of Divinity and Law, and by not less than 33⅓ per cent. and not more than 50 per cent. on the aggregate amount in the Faculty of Medicine. The Court adopted the recommendations of the conference, and instructed the secretary to intimate to the University Courts of the other Scottish Universities that it was prepared to take action in accordance therewith.

Epidemic at St. Kilda.

The medical officer who recently visited St. Kilda on behalf of the Scottish Board of Health, in his report to the Board, states that the epidemic was mumps, which seemed to be introduced into the island during the latter part of August. Since that time cases have been occurring so regularly that it was safe to assume that fully half of the 74 inhabitants—37 males and 37 females—had been affected. The epidemic was not restricted to young persons. No deaths took place, and in the main the cases were not very acute, although a few were sharply ill for two or three days. The salient features of the epidemic were the variability of the symptoms and a high incidence, especially among males, of some of the known complications of the disease. Not one single inhabitant of the island could recollect a case of mumps having occurred in St. Kilda.

One Hundred Years of Gynaecology in Edinburgh.

At a meeting of the Edinburgh Obstetrical Society on November 10th the following officers were elected: President, Dr. William Fordyce; Vice-Presidents, Drs. Robert Jardine and Haig Ferguson. Dr. William Fordyce, in his presidential address, referred to the loss sustained by the society in the death of Dr. Berry Hart, whose contributions amounted to seventy-two papers, including his classical works on the anatomy of the pelvic floor. His teaching on this subject as well as on the cause of the internal rotation of the fetal head was now generally accepted. His *Manual of Gynaecology*, written in collaboration with Dr. Barbour, marked a distinct epoch in British gynaecology. This work might be said to be the first scientific textbook on modern gynaecology. The President then dealt with some of the respects in which Edinburgh was associated with the development of gynaecology during the past century. He recalled the fact that Ephraim McDowell—whose first operation in America for the removal of an ovarian tumour, carried out in 1809, was the birth of abdominal surgery—came to Edinburgh in 1792 to study for a period of two years. His subsequent surgical successes were probably the result of the teaching received in Edinburgh from his teacher, John Bell. In the year 1816 he drew up a report of three successful cases of ovariotomy. In 1824 Lizars in Edinburgh performed the operation once, and in 1825 three times with indifferent results. The operation was not repeated in Scotland for twenty years. In 1846 Handyside of Edinburgh read a paper advocating the operation to the Edinburgh Medico-Chirurgical Society, and this was the beginning of a long-drawn-out feud between the obstetricians headed by Sir James Simpson and the surgeons headed by Syme, who condemned the operation. The opposition only began to die down thirty years later, when Charles Clay of Manchester, Spencer Wells, and Thomas Keith of Edinburgh firmly established the operation in surgery. In the middle of the century the two prominent pioneers in gynaecology were Marion Sims of America, whose vaginal speculum, and Simpson in Edinburgh, whose advocacy of the uterine sound gave an impetus to gynaecology which could hardly be exaggerated. It was doubtless due to the importance with which Simpson's work and genius had invested the subject that the Edinburgh Royal Infirmary managers in 1850 for the first time in this or any other country instituted a distinct gynaecological department.

Ireland.

Memorial to the late Mr. Robert Campbell of Belfast.

The medical friends of the late Mr. Robert Campbell have thought it appropriate that steps should be taken to commemorate the pioneer work he did for surgery in Ulster. An endowment fund has been established for this purpose, and at a meeting of the subscribers, held in the Medical Institute, Belfast, on November 8th, it was decided that the memorial should take the form of a prize, to be called the Robert Campbell Memorial Prize, to be awarded periodically for distinguished work in any branch of medical science to that member of the profession in Ulster or to that graduate of Queen's University, Belfast, whom, at the time of the selection, the committee should consider most deserving of the honour. It was also decided that the award should entail on the recipient the duty of delivering an oration to the profession, to be called

the Robert Campbell Oration. The following Executive Committee was appointed:

The Professors of Surgery, Medicine, Midwifery, Gynaecology, Ophthalmology, Pathology, Anatomy, and Physiology in Queen's University, Belfast;
The Presidents of the Ulster Branch of the British Medical Association and of the Ulster Medical Society;
The Chairman of Staff of the following hospitals: Royal Victoria, Mater Infirmorum, Queen Street, and the Ulster;
Dr. John Campbell and Dr. J. Walton Browne. Dr. James Colville was appointed treasurer, and Dr. Thomas Houston secretary.

This Executive Committee was given power to appoint five trustees, two of whom must be general medical practitioners, and, along with the trustees, to award the prize from time to time.

The following subscriptions to the endowment fund have already been received:

	£	s.	d.
W. Monypeny	10	10	0
C. Graves (Cookstown) ...	5	0	0
Wm. Burns	10	10	0
S. Blakely	5	5	0
W. M. Killen (1st instal.)	5	5	0
W. G. MacKenzie ...	10	10	0
W. R. MacKenzie	5	5	0
T. S. Holmes	5	5	0
S. B. Boyd (Ballymoney)	10	10	0
Foster Coates	5	5	0
G. St. George (Lisburn)	5	5	0
I. Wallace (Knockaholiet)	5	5	0
R. Marshall	3	3	0
W. Smyth (Antrim) ...	5	0	0
J. Walton Browne ...	10	10	0
T. Houston	21	0	0
T. Sinclair	21	0	0
R. Johnston (Portrush)	21	0	0
J. B. Johnson (Gilford) ...	5	5	0
S. R. Hunter (Dunmurry)	3	3	0
R. R. Leathem	5	5	0
A. P. B. Moore	5	5	0
G. M. Irvine (Mount Norris)	2	2	0
A. E. Knight (Donaghadee)	2	2	0
Sir John Fagan (Monasterevan)	5	5	0
H. Moreland McCrea (London)	5	0	0
George Hart (Measham)	10	10	0
H. W. Cunningham (Londonderry)	2	2	0
James A. Clarke (Carrick)	5	0	0
David Huey (Bushmills)	5	0	0
I. R. Greenfield (Holywood)	5	5	0
T. D. Warnock (Donegal)	10	10	0
C. G. Lowry	10	10	0
R. McDowell	5	0	0
John McCaw	5	5	0
Boyd Campbell	2	2	0
J. S. Morrow	21	0	0
L. Rentoul	5	0	0
J. A. Lindsay	10	10	0
I. A. Davidson	10	10	0
T. H. Milroy	10	10	0
D. P. Gaussen (Dunmurry)	5	5	0
R. M. Beatty (Heckmondwike)	5	0	0
S. J. Killen (Carrick) ...	3	3	0
T. Killen (Larne)	3	3	0
T. C. D. Cathcart	3	3	0
R. J. Johnstone	21	0	0
Wm. M. Burnside ...	10	10	0
James Huston (Carrick) ..	10	10	0
G. G. Lyttle	5	5	0
John McCrea (Wargrave)	5	5	0
Howard Stevenson ...	10	10	0
T. B. Pedlow (Lurgan) ...	10	10	0
H. L. McKisack	10	10	0
Brice Smyth	5	5	0
M. Brice Smyth	5	5	0
H. R. Irvine	2	2	0
R. Martin (Banbridge) ...	1	1	0
Joseph Martin (Donaghadee)	2	2	0
A. Gardner Robb	10	10	0
W. J. Wilson	2	2	0
S. I. Turkington	2	2	0
Alex. Burns	5	0	0
Total received ...	£456	12	0

Members of the profession who wish to susbcribe are requested to send their donations to Dr. James Colville, 7, University Square, Belfast.

Correspondence.

SURGICAL TREATMENT OF ANGINA PECTORIS.

SIR,—Your annotation (BRITISH MEDICAL JOURNAL, November 20th, p. 793) under the above title refers to an important subject—important not only because of its scientific interest, but also as to the advisability of procedures Jonnesco appears to have practised frequently, and apparently with success or impunity. His example has not been followed in this country to any extent, and the results of double sympathectomy or sympathotomy low down in the neck, with the view of influencing the syndrome of Graves's disease, have not, so far as I know, been encouraging.

I remember meeting my late friend Mr. C. B. Lockwood on one occasion on his way to St. Bartholomew's Hospital where, he stated, he intended that morning performing a double sympathotomy for Graves's disease. With the brutality of an intimate I told him he would kill his patient. He replied that the brilliant results reported from the Continent scarcely justified my prophecy. His surgical skill and accurate anatomical knowledge no one who knew "C.B." will dispute. He was not deterred by my lugubrious forecast. The patient was a young woman. Both sympathetics were divided. The condition of the patient was aggravated forthwith, and she died in about twenty-four hours. Lockwood characteristically sent me the notes of the case. Jonnesco has been singularly fortunate in having met with no fatality in "159 operations."

As regards the surgical treatment of angina pectoris, it is of interest to note Jonnesco's apparent success in a case showing anginal symptoms. The operation is stated to have been unilateral, but was certainly thorough and avulsed or cut athwart much respected physiological paths to and from the heart. Here also we must congratulate the surgeon on a result which was gratifying, although the success will have to be repeated before he finds imitators. In this case Jonnesco adopts the well known view of Sir Clifford Allbutt as to the causation of angina pectoris. The etiology of the condition is not, however, in my opinion, only explicable on one hypothesis, although aortic stress probably plays a part in many cases.

I believe I was the first to employ precordial thoracotomy in a case of aortic valvular disease for severe anginal symptoms. The operation was performed by my colleague, Mr. Ewen Stabb, at the Great Northern Central Hospital on May 1st, 1908, with a very gratifying measure of success, although the anginal symptoms did not entirely disappear. The patient survived for four years, and then died accidentally from septic endocarditis. The case was reported in the *Lancet* in July, 1908.

We shall await with interest further successes or failures of Jonnesco's procedure in angina pectoris, but I would suggest that in the meantime the glory of establishing the advisability of this heroic measure in such cases be not disputed by this country.—I am, etc.,

London, Nov. 22nd. ALEXANDER BLACKHALL-MORISON.

VENEREAL DISEASES AMONG SEAMEN.

SIR,—We have read with much interest the account of the recent meeting of the Office International d'Hygiène Publique, which appears in your issue of last week, and the decisions arrived at there with reference to combating venereal diseases among the seafaring population.

It may be of further interest to your readers to know that the National Council for Combating Venereal Diseases has been dealing with this question for more than a year past, and that we are justified in believing that the matter has now become an international one as the outcome of their action and their constant negotiation and communication with the Shipping Federations, Seamen's Unions, and other bodies connected with the health of the merchant seamen.—We are, etc.,

W. G. MACPHERSON,
Chairman, Services Committee.
OTTO MAY,
Honorary Medical Secretary.

National Council for Combating Venereal Diseases, Nov. 23rd.

INTRAVENOUS PEPTONE THERAPY IN EPILEPSY.

SIR,—Professor Edgeworth has recorded (p. 780) such good results that it seems rather unfortunate he should have shrunk from attempting any classification of the conditions to which peptone therapy in some form has been applied. Perhaps, therefore, a few observations may not be out of place with a view of bringing some order out of chaos.

With regard to the first four conditions on Professor Edgeworth's list—haemophilia, purpura, paroxysmal haemoglobinuria, and intestinal haemorrhages—peptone was used about ten years ago by Nolf in order to increase the coagulability of the blood. In animal experiment it is found that Witte's peptone in doses under 2 cgm. per kilo of body weight hastens coagulation, while doses over that quantity retard it. Nolf injected (usually into muscle) 10 c.cm. of a 5 per cent. solution Witte's peptone for the sole purpose of rendering the blood more coagulable. This forms the first group of cases.

The second group is represented in Professor Edgeworth's list by streptococcal septicaemia and "multiple arthritis of various kinds." This is the group of certain acute, subacute, and more or less chronic infections which in recent years have been treated by pyrogenic agents in order to produce a systemic reaction of greater or less intensity. Typhoid and coli vaccines are mostly employed, but peptone in large doses and sterilized milk are also amongst the other agents used. The suggestion of Nolf was that in this way "a violent reaction is induced in the

apparatus which regulates the colloidal balance in the blood plasma."

A third and last group is represented by asthma and epilepsy. Here the use of peptone differs *in toto* from either of the above, and consists in a series of minute immunizing doses with avoidance of reaction. This was designed by the writer in order to induce a tolerance to the anaphylactic poison, which is identical with a poison produced in the body by peptone. At first used for asthma, I latterly (BRITISH MEDICAL JOURNAL, 1920, vol. i, p. 567) recommended this treatment for other recurring explosive disorders independent of gross organic lesion and doubtless anaphylactic in nature, mention being made of such explosions in the central nervous system, of which migraine and epilepsy are the most outstanding.

May I suggest, in conclusion, that the discrepancy in the results found by Professor Edgeworth may be due, in part at least, to what may be termed "defective linkage"? By giving weekly instead of four-day doses the critical point may have been passed, as the body disposes of peptone much more rapidly than of bacterial vaccine.—I am, etc.,

London, W., Nov. 21st. A. G. AULD.

THE WASSERMANN REACTION.

SIR,—In connexion with the letter of Dr. H. Wansey Bayly (BRITISH MEDICAL JOURNAL, August 7th, 1920), in which he casts doubts on the reliability of the Wassermann test, it may be of interest to your readers to know that this question has been the subject of a certain amount of controversy in the columns of the *Medical Journal of Australia* during the past year. In the issue of that journal of April 24th, 1920, I put forward certain aspects of the test which, in my opinion, prejudiced its reliability, and invited comment from bacteriologists and others in the hope of establishing or refuting the correctness of these opinions. So far I have received practically no response locally, and I feel that in view of Dr. Bayly's "campaign" it is justifiable to repeat my remarks in the BRITISH MEDICAL JOURNAL.

Briefly, the basis of my doubts as to the accuracy of the Wassermann test is the fact that the test is essentially one for the presence of the antibodies excited by the spirochaete and not for the organism itself; and it seems obvious that in order to establish its reliability the following questions must be settled:

1. Does a positive reaction signify that syphilitic antibodies are present?
2. Does the presence of syphilitic antibodies signify that living spirochaetes are present?

The first question can only be answered in the affirmative if absolute proof is forthcoming that a non-specific antigen (heart extract) will produce complement fixation in the presence of only one out of the hundreds of bacterial antibodies presumably always present in the human blood. Surely, in the present state of our knowledge regarding bacterial antibodies, such proof must be quite impossible.

An affirmative answer to the second question is even more difficult to reconcile with everyday clinical experience. Is it not universally recognized that the immunity following an attack of an infective disease lasts for months, years, or indefinitely after the exciting cause has ceased to exist; or, in other words, that the antibodies for that particular disease persist in the blood for a variable time after the disease has completely disappeared? Unless we assume that syphilis differs from all other infective diseases, there is every reason to suppose that the syphilitic antibodies (and therefore a positive Wassermann reaction) may persist in the blood long after the death of the last spirochaete.

This latter question is of vital importance, because it throws grave doubts on the practice of demanding a negative Wassermann reaction as proof of the cure of syphilis; perhaps the majority of cases in which the test comes under suspicion are those in which a patient, having received a full and efficient course of antisyphilitic treatment, still gives a positive Wassermann reaction at the end of it.

It would seem that Dr. Bayly's efforts to collect information from practitioners on this subject will not materially increase our knowledge, for at best it can only result in a mass of statistics proving an unreliability in the Wassermann test which is already well known to those who have much to do with the treatment of syphilis. At the same time there is an implied lack of faith in the workers in different laboratories, which must be deplored; let us confine our criticism to the test itself, for we should have nothing but thanks for the painstaking workers who perform it for us.

I would suggest that more good would result from an attempt to elicit from those authorities who champion the test some satisfying arguments which would enable us to think as they do, without flying in the face of our common sense and clinical experience.—I am, etc.,

H. C. COLVILLE,
Assistant Surgeon, Venereal Diseases Clinic,
Melbourne, Oct. 8th. Alfred Hospital.

MUSCLE RE-EDUCATION IN INFANTILE PARALYSIS.

SIR,—I crave your indulgence to reply to two criticisms of my recent paper on this subject which have appeared in your issues of October 30th and November 13th, the former by Dr. Edgar Cyriax of London, and the latter by Dr. W. H. Broad of Liverpool. Both these gentlemen have done me the honour of carefully reading my article, and I am indebted to them for their by no means unfriendly remarks.

Dr. Edgar Cyriax and Dr. Broad are well known and highly reputed exponents of Swedish remedial exercises, and it is very natural that they should have taken up the cudgels in defence of what they consider are the prior claims of their art in the non-operative or purely muscular side of the treatment of infantile paralysis. The point at issue is their contention that neither Dr. Mackenzie in his published works extending over the last ten years, and mainly embodied in *The Action of Muscles*, which I had the privilege of editing, nor I myself in my recent article, have brought forward any new principle or idea in muscle work in this disease, which was not known to the Swedish school of remedial exercises for nearly a century.

In any system of medical remedial treatment principles as a fundamental base for the structure are essential, and are naturally included in any textbooks on the subject.

Here I may fittingly quote an impartial scientific writer—Professor Arthur Keith, in *Menders of the Maimed*, page 217, speaking of Ling's work and that of his pupils, states:

"We have been searching Europe of the nineteenth century to discover the principles and practice of the men who sought to repair the human machine by throwing it into action, sometimes by active and at other times by passive means. It must be owned we have discovered practice rather than principle. Anyone who examines critically the writings of the modern representatives of the Swedish school will discover that Ling's system of 'medical gymnastics' has grown into a bewildering code of arbitrary and empirical practices which can be justified only by the benefits which are said to attend their application."

Dr. Mackenzie's system of muscle re-education, in contradistinction to this empiricism, attempts to place muscle work in infantile paralysis on a sound scientific basis, and he does lay down for guidance and future advance certain definite principles; my contention is that as regards Swedish remedial exercises these are absolutely new principles, and the above quotation substantiates this.

The plan of treatment is immediate anatomical rest for weak muscles in the zero position; and biological re-education of muscle, beginning in the zero position. The zero position is defined as that position of anatomical rest in which the individual muscle is relaxed and both its own action and that of its opponent prevented. Muscle work should begin each day at zero, and gradually work up to and beyond the highest point achieved before. The object of treatment is to find some work the muscles can actually do—the minimum for a healthy muscle but the maximum for the weak muscle—and after attempts at movement to immediately rest the muscle again in the zero anatomical position by means of scientifically devised and accurately fitting splints.

To quote Professor Keith again: in speaking of the orthopaedic principles of John Hunter (*Menders of the Maimed*, page 12), and referring to this subject, he states:

"Dr. Mackenzie makes no claim to be the discoverer of the 'minimal load' treatment of disabled muscles, but I am certain that no one has realized its practical importance more than he, and no one has realized and applied the right methods to the restoration of disabled muscles with a greater degree of skill."

Biological muscle re-education is, on the other hand, a completely new idea. Dr. Mackenzie states that muscle action is a complex function, one made up of several separate activities, and hence the term "paralysis" of muscles is really referable to the loss of some, not

necessarily all, of their functions. The recovery, like the loss, follows in ancestral or evolutionary sequence. He again states: "The particular functions of any muscle are the result of the evolutionary history of that muscle."

The late Professor Osler, in the last edition of his famous textbook, *Principles and Practice of Medicine*, on the subject of the treatment of acute poliomyelitis, quotes Dr. Mackenzie exclusively and extensively, and makes no mention of Swedish remedial exercises. Dr. Mackenzie would be the first to admit our great debt to the Liverpool school of orthopaedics, where, under the guidance of Owen Thomas and Sir Robert Jones, scientific anatomical rest for paralysed muscles was first studied and brought to the notice of the medical profession.

Without a sound knowledge of the principles of the application of splints to weak muscles in cases of infantile paralysis I fail to see how any specialist in Swedish remedial exercises can hope to achieve any real benefit to sufferers from this disease.

When the use of splints is no longer necessary, and resistive exercises can be begun, then Swedish remedial exercises come into their inheritance, and it is then I find them of great value, and admire the care with which they have been designed. I use them freely for strengthening muscles which have recovered function, but not strength of action, and I have never considered that they could initiate muscle function from zero; this is the sphere of pure muscle re-education. What the two ideas have in common is that the patient's brain must be one of the essential factors in the treatment.

How Dr. Cyriax can contend, and Dr. Broad support him, that this method of muscle re-education which I have briefly outlined is the same as the exercises devised by Ling, when neither scientific muscle rest, zero position, nor biological muscle re-education can be quoted from Swedish remedial textbooks, passes my comprehension, and reminds me only of those ardent followers of Bacon who in their zeal ascribe to him not only his own works and those of Shakespeare, but also those of all the other Elizabethan poets and dramatists as well.—I am, etc.,

London, W., Nov. 20th. CHARLES MACKAY.

WATER RATES IN DISPENSING PRACTICES.

SIR,—A case was recently brought to the notice of the Council of the Medical Defence Union which is of considerable importance to the profession. A member who dispenses his own medicines discovered that he was being charged a special water rate in respect of his surgery. After considering the position carefully and taking counsel's opinion the Council decided to fight the case, and invited the Water Company to take police court proceedings against our member in order that a case might be stated for the High Court.

This the Water Company decline to do, as it appears that their present functions will be taken over next March by the City Corporation under a new Act of Parliament. Meanwhile, the claim against our member is not being proceeded with; but as it is probable that a similar charge is being made on other dispensing doctors, possibly without their knowledge, it is hoped they will carefully examine any demand they receive for water rates, and will resist payment of any special rate levied in respect of their surgeries.

The Union is determined to contest the point wherever any member is victimized in this way.—I am, etc.,

JAMES NEAL,
London, W.C., Nov. 22nd. General Secretary.

THE INDIAN MEDICAL SERVICE.

SIR,—The officers of the I.M.S. have received a communication from the Association pointing out that the pay, pension, leave, and other matters have now been put on a satisfactory basis. It is apparently assumed that all disadvantages have now been removed, and officers are therefore being called on to praise the service and beat up recruits as a mark of gratitude. The I.M.S. is heartily grateful to those who have brought about the bettering of their terms of service, but is it certain that these material conditions are the only ones that count in considering the question of service in India at present?

Many men now serving in India in various professions are not convinced that such service will offer in the future a career acceptable to Europeans, and are giving advice accordingly. Will the Association accuse of ingratitude those men serving in India who hold opinions and give advice different from those held and given at home?

> The toad beneath the harrow knows
> Exactly where each tooth point goes.
> The butterfly upon the road
> Preaches contentment to that toad.

—I am, etc.,

October 22nd. OUT THERE.

PRIMARY HEALTH CENTRES.

SIR,—In the Interim Report of the Consultative Council the primary and secondary centres are made a great point of; we are also told that the general practitioner will be able to have his patients then under his own care. The question arises, Who is going to pay the general practitioner for these services? The buildings will be State buildings, and everything in them will be State property, paid for by the taxpayer, who will also be the patient. Is it likely that any patient will consent to pay his doctor fees in a building of this kind? In a building which he—the patient—has paid for, and which he himself keeps up, he will expect to have everything done for him without any expense. That being so, who will pay the doctors? The State? If this is so, we all become servants of the State, and will only get State fees, and we know what that means. Can we imagine the State paying a fee of twenty guineas for an operation for appendicitis? Probably two guineas would be considered ample, and probably 2s. 6d. would be considered sufficient for a visit. If this scheme is carried through we shall not only become servants of the State, but most of us would be paupers.

With regard to the diagram of the proposed primary centres for Gloucester in the Interim Report of the Consultative Council, may I call attention to the following:

1. Every primary centre in the diagram is within half an hour's run in a motor ambulance of an existing hospital. Nailsworth (population 3,031) and Painswick (2,587) are within four miles of Stroud; these are marked down for Type No. 2.
2. The initial cost of building these centres, buying and laying out sites, etc., would be respectively at present day £100,000, £175,000, and £250,000, or thereabouts.
3. The up-keep would be enormous, requiring matron, nurses, servants, pharmacists, radiographers, laboratory assistants, electrical engineers, gardeners, etc.
4. According to *Burdett's Hospitals and Charities* the beds in the present hospitals in the district are not fully occupied.
5. *X*-ray apparatus, operating theatre furniture, etc., is daily being improved, and the fittings would be obsolete in ten years and have to be renewed.

The conclusion I have come to is that it would be better to enlarge existing hospitals and have a good motor ambulance attached to each. I cannot believe that 25 beds are required for "hospital cases" in a population of under 5,000, especially if tuberculous and cancer cases were excluded; it means that one person in every 200 of the population is so seriously ill that he requires hospital treatment. Moreover, in any event, the obscure cases and those requiring major operations would after all have to go into the secondary centres. The idea that the general practitioner could keep his patients under his own care is put in to delude him. The cases which could afford to pay the general practitioner good fees would have homes fit to remain in, and if the case were too bad to be nursed at home, it would probably have to go into the secondary hospital. The establishment of a primary centre in any place with less than 15,000 inhabitants is unnecessary, and even then Type No. 1 would be large enough.

The whole report of the Council shows that they have overestimated the amount of sickness in the country; they must think the whole nation is rapidly degenerating and dying like flies. Perhaps their information is derived from hospitals or consulting practices, where one only sees the obscure or serious cases. I doubt whether more than one case in five hundred seen by the general practitioner requires "hospital treatment," except in mining and factory districts.—I am, etc.,

Leytonstone, Nov. 19th. ARTHUR T. TODD-WHITE.

GONORRHOEAL MASTITIS.

Sir,—The case described by Drs. Oxley and Dundas in the Journal (November 13th, p. 744) is interesting from many points of view, but I am of opinion from the description given that it was not a case of "primary gonorrhoeal mastitis."

Where there is a systemic gonococcic infection, one occasionally, though rarely, finds abscesses containing gonococci forming. Such cases have been described by Sahli, Meyer, Kerassotis, Campbell, and others. I personally have seen one such case. They originate by metastasis from a gonorrhoeal infection; the *locus* of the abscess seems to be determined by a trauma. In your correspondents' case the engorgement of the genitalia due to the pregnant state would account for the metastasis, and the injury to the breast explains the localization of the abscess.

The denial of the husband ever having had gonorrhoea does not exclude the possibility that signs, apart from symptoms, of old-standing infection were present, and further experience in venereal practice teaches one not to place too much reliance upon statements made by women when suffering from venereal disease.

In conclusion, I would contend that the condition described by Drs. Oxley and Dundas was a mammary abscess secondary to gonorrhoea.—I am, etc.,

Manchester, Nov. 16th. M. W. Browdy.

NOMENCLATURE OF DISEASES.

Sir,—I have the honour to ask the attention of your readers to some proposals for unifying the terms used in the nomenclature of disease which the delegates of Peru had the honour to present at the recent International Conference held in Paris to revise the classification of the causes of death. This memorandum indicates that practical medicine might derive advantages similar to those which have long been obtained in chemistry by attaching definite significance to particular terminations.

The proposals made for the purpose are simple and logical. The termination "itis" should in all cases be applied to inflammatory diseases, and the termination "algia" to painful conditions. All diseases caused by a well determined bacillary agent should have the termination "osis"—for example, tuberculosis, typhosis, syphilosis, leprosis, etc., a group which would be added to as knowledge advances. Similarly the termination "iasis" should be restricted to diseases caused by parasites, as is already the case with many diseases, such as trichiniasis, trypanosomiasis, elephantiasis, etc.; this should be extended to paludiasis, acariasis, etc.

It is not proposed to ask for the disuse of terms like small-pox, cancer, and diabetes, which belong to the language, but it is suggested that if, for scientific purposes, and particularly for purposes of international comparison, an official nomenclature is constructed, it can with great advantage incorporate such simple rules as those which are suggested.

The conference adopted the terminology suggested as alternatives to the terms at present in use.—I am, etc.,

Paris, Nov. 21st. J. Guillermo Arbulú.

*** Dr. Arbulú encloses a copy of a memorandum, printed in French, which gives further examples of the proposed terminology.

THE SUPPLY OF ORTHOPAEDIC SURGEONS.

Sir,—In the British Medical Journal of November 20th you have printed the interesting remarks of Sir Robert Jones in regard to orthopaedics and the working of a department in a general hospital. In Sir Robert's closing remarks he says: "At present, alas! there are not enough orthopaedic surgeons to meet hospital demands." At the present moment there are several surgeons with experience of orthopaedics anxious to obtain posts, one, if not two, after twelve months' search, contemplating emigration rather than continue a fruitless search. As Sir Robert rightly says, a hospital appointment is essential to the practice of orthopaedic surgery.

May I give my own case, which is not unique? Public school, university, F.R.C.S., four and a half years R.A.M.C., major i/c of a surgical division, and surgical specialist to a special surgical military hospital, unable to resume pre-war work.

I am at present in touch with two other medical men in much the same condition and only asking for opportunity to start work, willing to make a beginning in a junior post provided there is scope. Are posts for orthopaedic surgeons available?—I am, etc.,

November 21st. Fifteen Years' Special Work.

Obituary.

THOMAS WHITESIDE HIME, B.A., M.D.Dubl., L.R.C.S.Edin.,

Formerly M.O.H. Bradford.

The announcement of the death on November 9th, at Sheffield, at the age of 78, of Dr. Thomas Whiteside Hime will recall to those engaged in the public health service in the last quarter of the nineteenth century a vigorous personality, a versatile intellect, and a fearless preacher of what he believed to be the truth. He graduated at Trinity College, Dublin, in 1868, and for a time took an interest in gynaecology, lecturing at the old Sheffield Medical School on midwifery and the diseases of women and children. In 1878 he was elected, for a term of five years, medical officer of health for Sheffield, and he entered upon his duties with characteristic zeal and thoroughness. In 1883 he succeeded Dr. Harris Butterfield as medical officer of health for Bradford, at that time a town with a population of about 200,000 persons and with much work ready to the hand of such an enthusiastic reformer as Hime. For example, the conservancy system was not only permitted but encouraged, and a form of privy was in use "capable of containing a cartload of filth, which was emptied as a rule not oftener than once in three months, and in many cases still less frequently." Hime was elected, under the pernicious system then in vogue, for five years, and during that period he worked hard to improve the condition of the town. As may be imagined, his reports and his recommendations were not altogether palatable to a reactionary local authority, and he suffered the fate of many pioneers who are ahead of their time. At the expiration of his five years of office he was not actually dismissed from office, but he was not re-elected. He had no appeal; the central authority could or would do nothing. This scurvy treatment of a chief official at the hands of the Bradford Corporation was resented very much by many of the inhabitants and by all the medical practitioners in the town, and he was presented with a purse of money "as a mark of their approval of the manner in which he had discharged his duties." The committee which promoted this testimonial had for its chairman the late Sir Henry Mitchell, and for its treasurer the late Sir William Byles, who expressed the hope, still unfulfilled, that the occasion might be the commencement of a successful movement to obtain for all medical officers of health the right of appeal to the Local Government Board in order that they might be able to perform their duties with due security and independence. Hime was by no means crushed by this rebuff. He established for a time an institution for the production of calf lymph, and carried out important researches, more especially in connexion with rabies and anthrax. In 1892 he was in Hamburg in connexion with the outbreak of cholera.

His prescience is well exemplified by the following extract from his first report to the Bradford Corporation in 1884:

> It is very much to be desired that benevolent persons would endeavour to improve the state of knowledge of poor women as to the feeding and managing of infants. This could be done by means of cottage lectures, the distributing of instructive leaflets, etc., and would be a most beneficent work.

In the same report he advised the isolation of consumptives, the destruction of tuberculous expectoration, and the sterilization of infected handkerchiefs and other articles. As a writer Hime is best known through his "Handy Guide to the Sanitary Laws" which is a monument of painstaking research into the realms of case law. He contributed the articles on offensive trades to Stevenson and Murphy's *Hygiene*, and on anthrax to Fowler's *Dictionary of Medicine*. Like so many of his countrymen he was an accomplished linguist and translated many foreign works, including Pettenkofer's *Cholera*. Also like many Irishmen he was generous almost to a fault, and

among the working classes in Bradford there are many who have cause to remember him with gratitude for having helped them over a stile at a critical period of their lives.

SAMUEL STRETTON, M.R.C.S., J.P.,
Consulting Surgeon, Kidderminster Infirmary.

We have to record with regret the death, on November 13th, of Dr. Samuel Stretton, in his 89th year. He was born in Leicester, and was a student of St. Bartholomew's Hospital. He took the diploma of M.R.C.S. in 1854, and held the post of house-surgeon to that hospital. On the outbreak of the war with Russia in that year he was one of a band of young men, which included Sir Spencer Wells, Dr. E. A. Parkes, and Sir John Kirk, who volunteered their services as civil surgeons. By Mr. Stretton's death Sir John Kirk remains the last survivor. Dr. Stretton was attached to the military hospital at Scutari for over a year, and experienced all the rigors of terrible winter. On returning to England he began practice at Kidderminster, and became honorary surgeon to the old Kidderminster Infirmary and Dispensary. His experience there led him to press for a new building, and eventually this end was achieved, and later on a children's hospital was erected. He was also medical officer of the Poor Law institution, and during his term of office had the satisfaction of seeing the erection of a workhouse infirmary. He enjoyed a large practice, but was able to find time to show interest in ambulance work, and also in education; he was a director of the High School for Girls. He was a magistrate for the borough and the county. He retired from practice about sixteen years ago and went to live at Droitwich, where he interested himself in the success of the town as a health resort. Dr. Stretton married in 1857 a daughter of Dr. W. Birch, and had the happiness of celebrating his golden wedding. They had ten sons and two daughters; one son is Mr. J. Lionel Stretton, senior surgeon to the Kidderminster Infirmary and Children's Hospital.

Universities and Colleges.

UNIVERSITY OF OXFORD.

The subject of Dr. J. A. Hadfield's Dale Lectures at Mansfield College is "The contribution of psycho-therapy to ethics and religion."

Mr. A. A. F. Peel has been elected to an Honorary Scholarship in Medicine at University College.

The following candidates have passed the examinations indicated:

D.P.H.—*Part I:* C. N. Atkins, Ina Marion Clarke, W. V. Corbett, M. K. A. Khalik, G. W. Ronaldson, R. H. Simpson, A. Viney.
Part II, and obtained the Diploma: H. M. Agnew, C. N. Atkins, T. C. Backhouse, C. L. Browne, F. C. Davidson, A. P. Ford, M. K. A. Khalik, C. Kingston, J. S. Moore, R. H. Simpson.

The Theodore Williams Scholarship in Physiology has been awarded to W. Russell Brain, B.A. (New College). The name was incorrectly spelt in our last issue.

UNIVERSITY OF CAMBRIDGE.

Mr. Alexander Frederick Richmond Wollaston, M.A., B.Ch., M.R.C.S., has been elected a Fellow of King's College. He was awarded the Gill Memorial Medal of the Royal Geographical Society in 1914 in recognition of his explorations in the Sudan, Ruwenzori, the Pacific, and Dutch New Guinea. He was medical officer of the British expedition to Ruwenzori, Central Africa, in 1905-6, medical officer of the British expedition to Dutch New Guinea, 1909-11, and leader of the expedition to Dutch New Guinea in the following year. He won the Distinguished Service Cross during his service as temporary Surgeon Lieutenant, R.N., in the war.

UNIVERSITY OF LONDON.

The following candidates have been approved at the examination indicated:

Third M.B., B.S.—†H. G. Broadbridge, ‡F. C. S. Broome, †G. W. Cheater, ‡M. Coburn, §G. F. P. Gibbons, ‡Edith M. Hall, ‡§R. M. Handfield-Jones (*University Medal*), *J. B. Hume, *†T. E. Roberts, †A. C. D. Telfer, *M. Tree, *O. Williams, D. W. J. Andrews, C. C. Beatty, G. Blurton, G. J. Bowen, J. V. C. Braithwaite, L. I. Braun, L. J. F. Bull, O. C. Carter, W. E. K. Coles, Florence E. Coombes, F. H. L. Cunningham, R. C. Davenport, T. R. Davies, J. J. P. de Chaumont, J. R. Dingley, J. D. Dyson, H. Ellis, R. E. Ford, R. K. Foulkes, E. D. Granger, A. S. Green, Hilda T. Haggett, W. A. Hawes, E. C. Hinde, M. H. K. Kane, R. P. Langford-Jones, H. S. Le Marquand, G. L. Levin, G. P. Lindsay, V. E. Lloyd, C. T. Maitland, R. G. Morgan, C. W. Narbeth, W. E. K. A. Quitmann, O. W. Roberts, E. L. Sergeant, R. G. Simpson, B. M. G. Thomas, C. H. Thomas, J. O. Thomas, Wm. Thomas, R. Thursz, J. E. A. Underwood, N. S. B. Vinter, Dorothea C. Wigfield, Lucy Wills, J. E. Zeitlin.

* Distinguished in Medicine; † in Forensic Medicine; ‡ in Surgery; § in Midwifery.

The following candidates have passed in one of the two groups of subjects:

Third M.B., B.S.—*Group I:* G. C. Agarwala, H. J. Blampied, P. N. Cook, R. B. Green, Gwenvron M. Griffiths, Kathleen H. Matthews, J. Y. Moore, A. H. Richards, L. M. Smith, I. G. Williams. *Group II:* J. R. Banks, F. M. Barnes, A. Bearblock, E. V. Beaumont, E. V. Corry, Elsie E. Cowperthwaite, L. ap I. Davies, J. O'F. Fletcher, Ada M. Freeman, I. Frost, G. F. W. Howorth, Teresa J. Iyer, E. H. L. Le Clezio, I. H. Lloyd-Williams, Gladys Matthews, Sybil G. Overton, H. N. Pritchett, S. Sacks, C. H. St. John, B. B. Sharp, Katherine J. Shaw, L. F. Strugnell, Norah E. Trouton, W. C. S. Wood.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.
Annual Meeting of Fellows and Members.

The annual meeting of Fellows and Members took place on November 18th. Sir Anthony Bowlby, President, was in the chair. The proceedings were delayed for a quarter of an hour in the absence of a quorum. Later about thirty-five were present.

The President summarized the annual report of the Council, Mr. Charles Ryall spoke on the subject of the College finances, which he said were now again prosperous, and Mr. H. J. Waring described the rearrangement of the museum, and said that negotiations were now in progress as a result of which it was hoped that the war pathological collection of the Royal Army Medical Corps would be handed over permanently by the War Office into the custody of the College as a national collection. In reply to questions, the President said that the Fellows of the College numbered 1,614, and the Members 16,028.

Dr. J. Brindley-James moved a resolution again affirming the desirability of admitting Members to direct representation on the Council in order that the constitution of the Council might be in keeping with modern ideas of representation. To procure from Parliament a new charter might or might not be difficult, but in any case justice imperatively demanded it. The present government of the College was in the hands of an extremely narrow oligarchy. Dr. S. C. Lawrence seconded, and the motion was supported by Dr. Lapthorn Smith and others. It was carried *nemine contradicente*, sixteen voting. Dr. Lawrence then moved a second resolution, in the same terms as the one carried at the previous annual meeting, requesting the President and Council to nominate at least two members in general practice to represent the interests of general practitioners in College affairs. Dr. F. G. Lloyd seconded, and Mr. Dennis Vinrace spoke in support of what he described as a conciliatory resolution which asked for something far less than the Society of Members considered ought to be granted. This motion was also carried *nemine contradicente*, fifteen voting.

The President said, in closing the meeting, that it was a pity to suggest, as some speakers had done, that the Council entertained any save the most cordial feelings towards the Members. There was no body of men in this country for whom he personally had a higher regard than the Members of the College; during the war he was much in contact with them in various parts of the world, and he was quite certain that no body of men by their work reflected greater credit upon an institution to which they belonged.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

The next award of the Triennial Reuben Harvey Memorial Prize will be made on July 1st, 1921. The prize, value £25, will be awarded for the best essay, on a subject to be selected by the candidate, evidencing research in animal physiology or pathology, the essay to be illustrated by drawings or preparations. Further particulars will be found in our advertisement pages.

The Services.

AUXILIARY ROYAL ARMY MEDICAL CORPS FUNDS.

The usual quarterly committee meeting was held on October 29th, at 11, Chandos Street, Cavendish Square, W.1. Eighteen grants were made to cases in the Benevolent Branch for the orphans of officers, amounting to £601, and fifty-two grants in the Relief Branch for widows and children of the rank and file, amounting to £1,510.

These funds are for the relief of widows and orphans of commissioned officers, non-commissioned officers, and men of the rank and file of the Royal Army Medical Corps, Special Reserve, Territorial Force, and new armies, and also for the relief of the children of those who have been so severely damaged in the late war that they need help for the education of children.

Requests for relief should be addressed to the honorary secretary at the offices of the funds, at 11, Chandos Street, Cavendish Square, W.1.

The Erb medal, which is given every three years to German neuropathologists who have published the best work in their speciality, was recently conferred on Professors Foerster of Breslau and Nonne of Hamburg, the judges being Professors Strümpell, Obersteiner, and Mingazzini.

Medical News.

A COURSE of five lectures on influenza will be given by Dr. F. W. Twort, superintendent of the Brown Institution (University of London) in the Theatre of the Royal College of Surgeons, Lincoln's Inn Fields, W.C. (by kind permission of the Council of the College) on Monday, Tuesday, and Wednesday, December 13th, 14th, and 15th, and on Monday and Tuesday, December 20th and 21st, at 4 p.m. Admission is free, without ticket.

THE annual dinner of the Medical Society, University College Hospital, London, will be held at the Criterion Restaurant on Monday, December 13th. All old members are invited to attend. Tickets may be had from Mr. G. O. Montgomery, Honorary Secretary, at University College Hospital.

THE next meeting of the Newcastle-upon-Tyne and Northern Counties Medical Society will be held on Friday, December 3rd. At 4.30 p.m. Sir William Macewen of Glasgow will give an address in the Connaught Hall, Newcastle, and in the evening, at 7.15 o'clock, the first annual dinner of the society will be held in the Grand Assembly Rooms, Barras Bridge, Newcastle. All medical practitioners and students are cordially invited.

IN recognition of his thirty-four years' service as medical officer to the St. John Ambulance Brigade, Dr. A. A. G. Dickey, M.B.E., J.P., who is shortly leaving Colne, has been presented with an inscribed silver salver. The presentation was made last week, and many tributes were paid to Dr. Dickey's devoted work on behalf of the ambulance movement in the town.

DR. F. HALL, of the Inner Temple, and Dr. T. Campbell, of Gray's Inn, have been called to the Bar.

THE London County Council has agreed that medical officers in its mental hospital service who require occasional daily leave in order to attend a course for a diploma or degree in mental disease shall be granted facilities, and shall also have leave, with full pay, for the period of the examination; and that leave of absence from a mental hospital, with pay, for a period not exceeding six weeks in one year shall be granted to a medical officer who desires to undergo a course of medical instruction at a university.

THE Department of Scientific and Industrial Research announces that a licence has been issued by the Board of Trade to the British Motor Cycle and Cycle-car Research Association.

THE Institute of Physics has now been incorporated and has begun work. Its object is to secure the recognition of the professional status of the physicist and to co-ordinate the work of all the societies interested in physical science or its applications. This co-ordination has already been secured by the participation of the Physical Society of London, the Optical Society, the Faraday Society, the Royal Microscopical Society, and the Röntgen Society. The first President of the Institute is Sir Richard Glazebrook, K.C.B., F.R.S., and Sir J. J. Thomson, O.M., the retiring President of the Royal Society, has become the first Honorary Fellow. It is a tribute to the status already acquired by the newly formed Institute that its diploma is now being required from applicants for Government and other important positions requiring a knowledge of physics, and thanks in great part to the Institute, the physicist is now becoming recognized as a member of a specific profession. Particulars with regard to membership can be obtained from the Secretary, 10, Essex Street, London, W.C.2.

THE invasion of Upper Silesia by the Poles last summer was followed by outbreaks of small-pox and typhus and by an epidemic of 1,200 cases of typhoid fever due to contamination of a reservoir.

IN September 619 cases of plague occurred in Java, all of which were fatal.

A MEDICAL society has been formed at the Russian Hospital, Tel-el-Kebir, where Russian refugees and wounded have been received since March, 1920. At successive meetings Dr. Mokin described the therapeutic use of the ultra-violet rays for war wounds, and Professor N. Dobrovolskaya demonstrated the symptomatology of arterio-venous aneurysm. Other subjects discussed were antiseptic wound treatment and peripheral nerve injuries.

IN Prussia the deaths from tuberculosis in women increased from 25,000 in 1914, to 30,000 in 1916, and 39,000 in 1917. In Leipzig the mortality from tuberculosis was 91.6 per cent. higher in 1918 than in 1914.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*: telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

MOTOR SCOOTERS.

WE are asked whether motor scooters can be recommended for use by medical men. We are advised that it is a type of vehicle which probably has a future, but at present it is not possible to speak with confidence. The Auto-Cycle Union had intended to hold a trial of motor scooters this autumn, but financial and other difficulties were encountered. It seems possible that these difficulties may be overcome in time to enable the Union to conduct a trial next year. A definition of motor scooter is required. The type in which the rider stands appears to be the best, but the public and the makers seem to favour the sitting type, in which there must be much vibration. The results of an official test under comparative conditions must be awaited.

HYPERHIDROSIS.

"BEATEN" writes: I have a patient who suffers from extreme sweating of the palms of the hands. As the patient is a person of some social position, it can be readily understood with what anxiety a cure is looked for. I should be glad if any reader can offer suggestions for treatment.

INCOME TAX.

"J. F. G." inquires as to the allowance for expenses under Schedule E.

*** Expenses "incurred wholely, exclusively, and necessarily in the performance of the duties" are admissible as deductions. Two of our correspondent's deductions appear to be open to objection by the income tax authorities. £52 per annum is rather high for the use of one room; we have known the analogy of a clergyman's allowance for a study applied in such a case—that allowance is based on one-eighth of the rent, etc. There is also no allowance for depreciation under Schedule E, and we think that "J. F. G." will have considerable trouble in inducing the inspector of taxes or the Commissioners to make him an allowance over and above that which he receives in cash from his county council. Possibly a car of the power and seating accommodation used is not "necessary" for the performance of his duties. As a minor matter the 10 per cent. allowance for earned income has to be calculated on the salary less expenses, not on the salary as unreduced by the deduction made—that is, in this case on £600−£x (the amount of allowable expenses) not on £600.

"X RAYS" wishes for information as to whether he is entitled to claim deductions for the cost of plates, chemicals, pastilles, x-ray tubes (repairs and replacements only), and repairs, etc., to his x-ray apparatus in arriving at his profits.

*** He is certainly entitled to deduct such expenses, as being incurred to maintain his professional equipment in proper condition, and thereby to continue to earn his professional fees; in fact, such expenditure was accruing due as against fees received for the use of the apparatus. It is perhaps advisable to add that such expenditure would not be admissible to the extent to which it may be incurred for private experiment and research.

"BILL" asks for information with regard to the allowance of the cost of replacing an old car. He asks whether a practitioner selling his old car for £100, and buying a new one for £1,000, can legitimately claim the difference of £900 as an expense, pointing out that the taxable income in such a case would disappear if the gross receipts of the practice did not exceed £1,000.

*** The £900 can be treated as a professional expense, provided that the car purchased was of similar power and grade. If, for instance, a similar car could have been purchased for £800, then £200 of the £1,000 represents additional capital outlay, and only £700 can be claimed as cost of replacement. At present the taxable income might not disappear owing to the operation of the three years' average basis of assessment, and in any case our correspondent's case is rather an extreme one. A £1,000 car is not usually regarded as reasonably required for a practice of £1,000 gross income. If the three years' average basis is discarded in the future in favour of the previous year's basis, we presume that it will be accompanied by the adoption of the other proposals of the Royal Commission, including the allowance of depreciation at, say, 15 or 20 per cent. in lieu of cost of replacement.

"H. E. B." inquires whether he is right in entering in his income tax returns *under Schedule D* all his varying fees from guardians, county council, and other local bodies, and stating he has done so on the Schedule E form.

*** Yes. Strictly, such fees are assessable under Schedule E, but the Board of Inland Revenue some years ago, recognizing that in the present day such work forms part of the ordinary activities of a medical practitioner, agreed to waive the technicality and to acquiesce in assessments on the general profits under Schedule D being made to include such fees.

LETTERS, NOTES, ETC.

Cereal Ears as Foreign Bodies.

DR. R. ECCLES SMITH, O.B.E. (Barry), writes: I note with interest the reference of Dr. G. C. M. M'Gonigle to the ear of barley quoted in the *Diary* of the late John Evelyn, 1662. Dr. James Gilchrist, the tuberculosis officer of Cardiff, has since sent me the notes of a case admitted to the Brompton Hospital in 1906, in which an abscess was opened in the side and an ear of barley or rye grass evacuated. The specimen is in the museum at the hospital. In this case also the "lung" symptoms appear to have been very slight and the cause obscure until the abscess appeared and was dealt with.

Delivery of Child and Placenta in Unruptured Membranes at Term.

DR. H. H. MARSDEN, M.B.E. (Ormskirk), writes: Following the report of Dr. Jas. H. Gilbertson in the JOURNAL of October 23rd, perhaps this case may be of interest. On July 30th of this year I was sent for by the district nurse of a neighbouring parish, who is a qualified midwife, to see a child just born and not likely to live. On arrival I found a diminutive infant, greatly cyanosed and only just alive. The nurse informed me that the whole sac containing infant and placenta was expelled intact after a rather prolonged first and second stage of labour. As she noticed movements, she tore open the membranes and extracted the child. By dint of careful feeding and nursing the child eventually came round, and is now, nearly four months old, a flourishing infant. The mother's age is 42. She has a son, aged 17, who works on a farm. Fourteen months after his birth she had twins. One died a week old and the other died three months old. Following this she had three confinements—in March, 1914, August, 1916, and October, 1917, at term. All three children were born dead, death having taken place several days before delivery. The parents are perfectly healthy, with no history of syphilis or anything which may account for these stillbirths.

Posture in Defaecation.

DR. S. H. WADDY writes: In my opinion the posture in defaecation is of much greater importance than is generally realized. Dr. Leonard Williams, writing of constipation (*Minor Maladies*, chap. 3), advocates the squatting posture, and refers to the element of fear in the child when promoted from the "pot de chambre" to poise himself precariously on the seat of the water-closet; and again he refers to the inactivity of the abdominal muscles during defaecation in the customary sitting posture. The squatting posture is not only much easier, calling for less straining, but, as Dr. Vickery shows (BRITISH MEDICAL JOURNAL, August 21st, p. 300), it offers valuable support to the inguinal region. I can quote a case of incomplete inguinal hernia which is only felt after much coughing or during defaecation without support. A truss is not worn, and so when about to cough the patient instinctively supports the left inguinal region with his fingers through the trousers pocket. During defaecation support is also necessary. In the sitting posture digital pressure is applied, but when "squatting" the natural pressure of the thigh is sufficient. In the East "squatting" seems the natural position. In Turkey and India, for example, the natives, men and women alike, squat during defaecation and micturition. In India, and I believe in other countries also, it is interesting to note, washing rather than the use of paper is the custom, and in some cases the parts are washed after micturition also, "using the hand which is not used for curry." I found when serving in small ships—destroyers and mine-sweepers—that there were usually many cases of constipation after rough weather. Most of these were attributable to the inability to defaecate, though the desire was there, when balancing on a high seat with the ship rolling. Lack of exercise and lack of fresh food were less important factors. In passenger ships constipation is also common, and in many cases this is due to the same difficulty of balancing, but in addition the passenger fearing sickness postpones a visit to the lavatory as long as possible. Years ago I appreciated these advantages of the squatting position, and I have suggested its adoption in cases of constipation, hernia, and also as a precautionary measure in the use of public lavatories. In the case of railway trains, however, it is well to remember that the contents of the trouser pockets can be easily strewn on the permanent way! Perhaps some day the marble slab will supersede the modern seat at home and remove one temptation for indulgence in the morning pipe and daily paper.

Public Gardens.

THE Metropolitan Public Gardens Association was formed in connexion with the National Health Society in 1882. Its object is to provide breathing and resting places for the old and playgrounds for the young in the midst of densely-populated localities; in this way it is thought not only to add to the amenities of life in the poorer districts, but also to contribute to an improvement in the health of the general population. From the thirty-sixth and thirty-seventh annual reports we select instances of the activity of the Association. The Southwark Bill, which sought powers *inter alia* for the sale of the disused churchyard of St. Olave's Church as a building site was successfully opposed. In conjunction with other societies the provision of "open space" forms of war memorials was advocated as being more lasting, less costly to maintain, and of greater public benefit than other proposed forms. The suggested erection of a permanent war museum in Hyde Park was opposed, and the removal (as well as the cessation of erection) of "temporary" buildings in Regent's Park and other public spaces was urged. It is the policy of the association to press for immediate resumption of public spaces suitable for organized games, allowing allotments to continue for a further season on public ground that cannot be utilized in this manner; it is stated that out of 1,600 acres (under the control of the London County Council) available for games, 42 per cent. are now occupied by allotments, and that during the summer 25 per cent. of applications for cricket grounds had to be refused, while in winter only 33 per cent. of the applications for football grounds could be granted. With the cessation of the war the association seeks to revive many old schemes and to bring forward a number of new ones; other parts of its work are the provision of gymnasiums in elementary schools and playgrounds, the opening of such playgrounds out of school hours; the planting, pruning, and felling of trees, and the placing of seats in thoroughfares and other public places. There is need for further subscriptions and donations, which will be gratefully received by the Earl of Meath, chairman and honorary treasurer, or by the secretary, at 296, Vauxhall Bridge Road, S.W.1.

Vacancies.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 46, 49, 50, 51, and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 47, 48, and 49.

THE following appointments of certifying factory surgeons are vacant: Hucknall (Nottingham), Pontypool (Monmouth).

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